

**Marine Maternity Dress Uniform  
Tunic, Skirt, & Slack  
Technical Report**

**Date: November 30, 1999**

Apparel Technology and Research Center  
California State Polytechnic University, Pomona

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Prepared By:  
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## Foreword

The Apparel Technology and Research Center (Cal Poly Demo) was funded by the Defense Logistics Agency (DLA) Apparel Research Network (ARN) to establish a demonstration and research manufacturing activity. As part of the ARN program, the work of the Cal Poly Demo is in support of the DLA and the Defense Supply Center, Philadelphia by:

1. Conducting studies on costs and problems associated with the manufacturing of military garments;
2. Manufacturing military garments the DSCP had difficulty placing with commercial businesses;
3. Recruiting new businesses to become military contractors through an incubator production program; and
4. Transferring the lessons learned in the demonstration factory to industry through an industry advisory committee, a newsletter, a Home Page and other events and activities.

During the first three years the following military items were produced and studied by the demonstration factory:

- a. Marine men's short sleeve dress shirt
- b. Marine maternity dress uniform - tunic, skirt, and slack
- c. All service Maternity Battle Dress Uniform - coat and slack

The purpose has been to identify and establish measurements and costs at each manufacturing function level as a basis for implementing continuous improvement to lower production costs, decrease lead times and maintain/increase quality levels.

Individual reports will be completed for each of the items above.

This report is for the Marine maternity dress uniform the Cal Poly Demo produced in support of the DSCP's requirement for a difficult to procure items.

## Executive Summary

### Marine Maternity Dress Uniform – Tunic, Skirt and Slack

As stated in the Foreword, the Cal Poly Demo (Cal Poly) was established as part of the Apparel Research Network (ARN) to be a demonstration and research manufacturing activity to support the Defense Logistics Agency (DLA) and the Defense Supply Center, Philadelphia (DSCP). The DSCP is responsible for the placement of military apparel contracts with commercial apparel manufacturers. The Marine Maternity Dress Uniform (MMDU) contract, composed of three items - a tunic, skirt and slack, is a low volume contract the DSCP had experienced difficulty placing. The Cal Poly Demo assisted the DSCP with production of these items after no commercial producer could be identified.

With the MMDU contract, Cal Poly's objectives were two-fold:

1. Assist the DSCP with understanding the labor hours, costs and issues experienced in the manufacturing of a small government contract.
2. Summarize the costs and labor hours for review by a prospective contractor.

For the first objective, the report in sections 2.0 and 3.1 through 3.7 documented all labor hours, costs and issues experienced in the manufacturing of the MMDU tunic, skirt and slack. The second objective is met in section 4.0 where the labor hours and costs are summarized in three tables:

Table 27: Hierarchy Cost with Labor Breakdown

Table 28: Cost Distribution by Hierarchy Level

Table 29: Labor Hours & Cost Distribution by Labor Grade

From the collected information, Cal Poly's manufacturing costs, excluding material costs and freight, for the MMDU garments are as follows:

Tunic \$21.03

Skirt \$9.62

Slack \$11.94

The majority of cost for the production of the garments (greater than 94%) is attributed to the following three factory hierarchy levels and pre-production:

**Table 1: Highest Cost Contributors**

Hierarchy Level	Tunic		Skirt		Slack	
	Cost	%	Cost	%	Cost	%
Sew, Finish & Inspect	\$7.85	37%	\$5.63	59%	\$6.83	57%
Ship & Invoice	\$6.68	32%	\$1.41	15%	\$1.95	16%
Plan & Initiate Production	\$4.31	20%	\$1.05	11%	\$1.39	12%
Pre-Production	\$1.05	5%	\$0.99	10%	\$1.05	9%

As seen in the previous table and as expected, the sewing represents the most significant cost. However, also illustrated and expected, is that for a low volume contract the indirect costs associated with processing and implementing an order (Ship & Invoice and Plan & Initiate Production in the above table) are significant cost contributors as well.

To further illustrate the relationship between order volume and indirect costs, the below table compares the three garments average order quantities and the percentage of indirect cost contribution:

Garments	Average Units Per Order	Percent Contribution to Mfg. Cost for Plan & Initiate Production and Ship & Invoice Hierarchy Levels
Tunic	2	54%
Slack	9	28%
Skirt	15	26%

Sewing efficiencies are calculated in Section 3.5, Table 20 and as anticipated for low volume production are lower than 100%, as illustrated below:

Tunic 80.29%  
 Skirt 45.03%  
 Slack 55.79%

For the skirt and slack, the above sew efficiencies are extremely low, even for a low volume production. The efficiencies are due to a varying number of operators performing the sewing operations for these garments.

A summary of the issues identified in the report include:

#### Section 2.0: Pre-Production

- The pre-production phase cost of \$5,962, or \$1.05 per unit, for the MMDU contract could be considered too high for a small manufacturer to incur as an up-front expense.
- Also, many small apparel manufacturers lack the working capital to invest in equipment for cutting and pattern making and therefore, are not able to bid for military contracts.

#### Section 3.1: Plan & Initiate Production

- From actual orders, the quantity of garments ordered is 31% less than the contract's projections.

#### Section 3.2: Manage Raw Materials

- An inventory procedure for trim materials needs to be implemented to avoid running out of supplies and stopping production.

#### Section 3.5: Sew, Finish & Inspect

- As previously presented, the sew efficiencies for the skirt and slack are extremely low. The low efficiencies are attributed to non-continuous work and the problems identified in the previous sections.

#### Section 3.6: Manage Finished Goods Inventory

- Cal Poly held a high inventory of tunics against forecasted orders.

#### Section 3.7: Ship & Invoice

- At contract start, Cal Poly experienced difficulty in locating addresses for shipment based on the shipping code. The problem was resolved when the DSCP listed the shipping codes and addresses on its web site.

Based on the findings, Cal Poly could potentially lower costs by:

1. Implementing an inventory control procedure for trim materials to avoid stopping and re-starting of production.
2. Creating a database to input and monitor actual order quantities and trends to optimize production batches without building excessive inventory.
3. Performing additional engineering studies on the sew activities to improve productivity.

In conclusion, the per unit costs of small volume contracts will be proportionately high because indirect costs are absorbed by fewer units. To help lower indirect costs, information systems for receiving orders, checking raw and finished goods inventory levels, and shipping and invoicing need to be linked within the manufacturing facility. By linking the systems, the manual indirect labor involved with communicating production information could greatly be reduced.



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# **1.0 Introduction**

This report is for the Marine Maternity Dress Uniform – Tunic, Skirt and Slack contract.

## **1.1 Background and Objectives**

The Apparel Technology and Research Center (Cal Poly Demo) was funded by the Defense Logistics Agency (DLA) to establish a demonstration and research manufacturing activity to support the DLA and the Defense Supply Center, Philadelphia (DSCP). One area the DSCP requires support in is the placement of military contracts with commercial apparel manufacturers. The Marine Maternity Dress Uniform (MMDU) contract, composed of three items - a tunic, skirt and slack, is a contract the DSCP had experienced difficulty in placing with a commercial producer because of the low volume.

The projected yearly orders were less than 4000 units for all three garments. The DSCP placed the MMDU contract with Cal Poly for the following two objectives:

1. To document, quantitatively and qualitatively by demonstrable samples, all times, procedures, issues and costs encountered in the production of the MMDU.
2. To summarize for a prospective contractor, the costs associated with the low volume production of military contracts.

## **1.2 Scope**

The study scope includes:

1. The summary of findings for the pre-production phase of the contract.
2. The documentation of the direct labor hours, labor costs and issues experienced by Cal Poly in the production of the MMDU.

The time period covered is from Spring 1996 – Summer 1999.

## **1.3 Methodology**

The report results are presented in the below sections:

- 2.0 Pre-Production Hours, Costs and Issues
- 3.0 Production Hours, Costs and Issues
- 4.0 Summary of Labor Hours and Costs

For Section 2.0, the Pre-Production Phase, all information within this report is based on Cal Poly's Indirect Labor Activity Cost Study for a Sample Military Apparel Contract Report<sup>1</sup>.

The information reported in Section 3.0, the production phase, is based on the following:

1. Interviews with Cal Poly's personnel;
2. Cal Poly's reported labor hours, units produced, and units shipped, reference Appendix A;
3. Labor Standards created using TimeQuest for Apparel Manufacturing software program, reference Appendix B.

For establishment of production labor costs the following pay rates from Cal Poly, inclusive of benefits, are used respectively:

**Table 2: Hourly Labor Wage & Experience Level**

Position	\$/Hour with Benefits	Experience Level
Manufacturing Manager	\$40.00	15+ years
Production Manager	\$23.81	10 years
Production Assistant #1	\$14.88	1 year
Sew Operator	\$9.00	Varies
Cutting Operator	\$10.16	8 years
Production Assistant #2	\$7.12	1 year
Machine Technician	\$23.57	27 years
Pattern Maker	\$35.00	15+ years

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<sup>1</sup> The Indirect Labor Activity Cost Study for a Sample Military Apparel Contract, September 21, 1996 can be located on the Apparel Technology & Research Center's web site, <http://ATRC.age.csupomona.edu>.

## 2.0 Pre-Production Costs and Issues

Pursuant to establishing a military contract, the below pre-production expenses are incurred by an apparel manufacturer:

1. Preparation of Specifications
2. Pattern Making
3. Producing of Samples
4. 1<sup>st</sup> Article Approval
5. Establishment of Vendor Relationships for Trim Material

The cost of the activities above are one time and not included under the factory's hierarchy levels defined in sections 3.1 through 3.7 but are to be added to the total cost of the garments in section 4.0.

For the MMDU contract, Cal Poly established a relationship with a commercial manufacturer, Frank Walter Sportswear (FWS), for the pre-production activities of the contract's three garments. Through this relationship, Cal Poly documented all pre-production costs and issues. This information, as previously indicated, can be referenced in the Indirect Labor Activity Cost Study for a Sample Military Apparel Contract Report, submitted September 21, 1996. For this report, the findings of the Indirect Labor Report are summarized.

The indirect labor report calculates a cost of \$5,962.02 for the MMDU pre-production activities and is summarized in the following table.

**Table 3: Pre-Production Costs Summary**

	Activity	Hours	Level of Expertise	Cost
1	Preparation of Specifications	14	Very Experienced	\$350.00
2	Pattern Making	3.1	Experienced	\$155.00
3	Production Coordination	28	Very Experienced	\$1,818.47
4	Cutting Material	9.75	Experienced	\$247.35
5	Production of Samples	144.23	Inexperienced	\$3,391.20
			<b>Total Cost</b>	<b>\$5,962.02</b>

To calculate a per unit cost, the total pre-production cost is divided by the MMDU contract's projected orders of 5,700 garments for 20 months, and is calculated in the following table.

**Table 4: Pre-Production Cost per Unit**

<b>Total Cost</b>	<b>\$5,962.02</b>
Contract's Orders to be Delivered	5,700
<b>Pre-Production Cost per Unit</b>	<b>\$1.05</b>

The issues experienced in the pre-production phase are summarized as follows:

1. Pricing - "Normal practice for pricing is to estimate [the] direct labor costs and multiply by a factor that covers minor overhead and profit. These factors are based on receiving bundles of ready-to-sew materials and production specifications. This project generated much more overhead than is accounted for in the usual factor and is, consequently, invalid and useless for pricing government contracts for military apparel."<sup>2</sup>
2. Military Specifications - "Military specs [specifications] are typically exhaustive and may be difficult for the small manufacturer to convert into production specifications they are used to using in their factory. The specs in this project were riddled with inconsistencies that required 14 hours of expert help to unravel and formulate into usable production spec. In addition, detailed operator instructions are also not provided and so the manufacturing method must be developed by the sewing contractor while making samples."<sup>3</sup> This phase directly contributed to the high cost of Phase 5, Production of Samples, in Table 2.
3. Patterns and Markers - "These were not provided in usable form. The materials provided had to be transformed into usable patterns and markers by a sub-contractor prior to cutting."<sup>4</sup>
4. Coordination with the DSCP - "Coordination with a government agency by floor management at an apparel manufacturer is difficult. Access and availability of immediate answers from government agencies is problematic."<sup>5</sup>

To conclude the pre-production phase, the indirect labor study noted the following:

1. Military Contract Assumptions - "Military contracts generally assume that the contractor will undertake all phases of apparel production from pattern making, to cutting and to sewing. This assumption, however, does not match up with much of Southern California's industry standard practices for small apparel manufacturers. Most manufacturers are specialized in cutting, sewing, or some other phase of apparel manufacturing. A small sewing company, for example, cannot afford the space and overhead of a full-sized cutting operation. They could not keep the cutting area busy enough to justify the overhead. Consequently, in many markets the customer coordinates (or has someone coordinate) manufacturing between small manufacturers [companies] and simply sub-contracts whatever they need. In this study, for example, it was found that Frank Walter Sportswear does not typically do cutting in-house...They receive bundles of already cut pieces which they then assemble."<sup>6</sup>
2. High Pre-Production Cost - The preparation "for production of military apparel is expensive and difficult for a small manufacturer that is used to receiving materials ready to cut or sew...The total up-front cost of \$5,962 is way above industry standard and would not entice a small apparel manufacturer to compete for a contract under normal pricing practices."<sup>7</sup>

The pre-production cost study was completed as a separate activity prior to the actual production of the three items. Pre-production costs were determined according to contract projections

<sup>2</sup> Indirect Labor Activity Cost Study for a Sample Military Apparel Contract, section 4.2.

<sup>3</sup> Indirect Labor Activity Cost Study for a Sample Military Apparel Contract, section 4.3.

<sup>4</sup> Indirect Labor Activity Cost Study for a Sample Military Apparel Contract, section 4.4.

<sup>5</sup> Indirect Labor Activity Cost Study for a Sample Military Apparel Contract, section 4.5.

<sup>6</sup> Indirect Labor Activity Cost Study for a Sample Military Apparel Contract, section 4.1.

<sup>7</sup> Indirect Labor Activity Cost Study for a Sample Military Apparel Contract, section 5.0

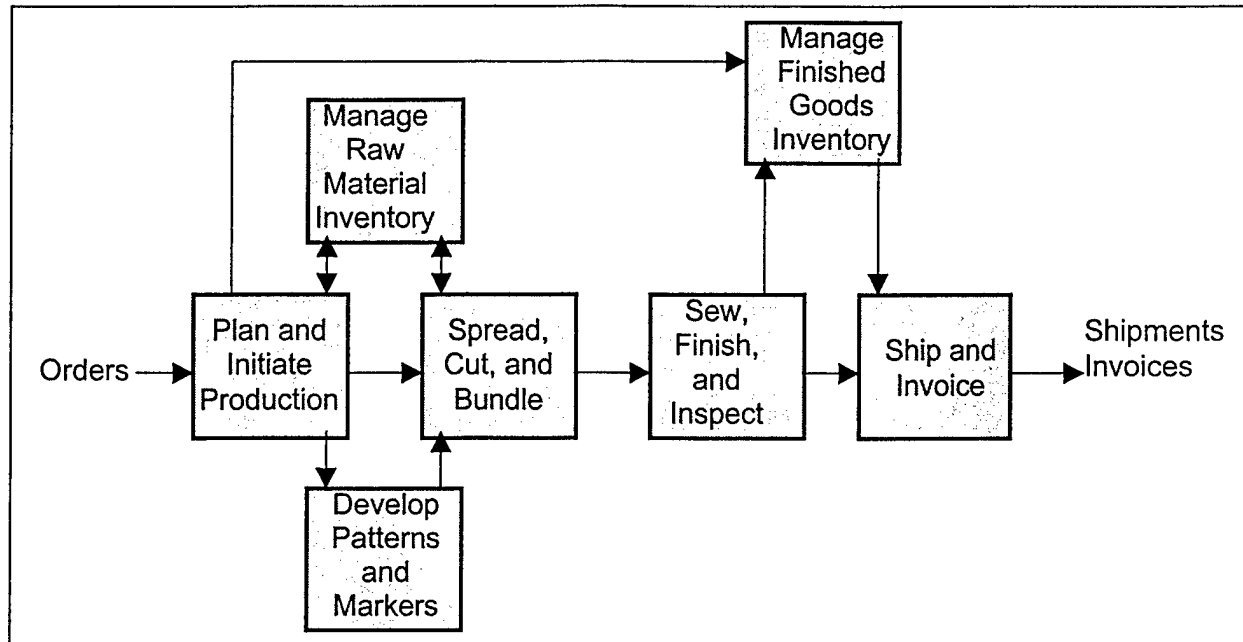
at the time of the study and its publication. As a result pre-production costs were not recalculated because total production for the contract was not yet completed.

Note: Frank Walter Sportswear had planned to produce the MMDU garments after the pre-production phase but went out of business in January 1997. Cal Poly decided to manufacture the MMDU in-house, and is responsible for all manufacturing and shipping processes. Eventually, Cal Poly plans to pass along the contract to a commercial manufacturer.

### 3.0 Production Costs and Issues

Production Costs and Issues are presented based on Cal Poly's factory hierarchy. The seven function levels illustrated in the following diagram represent the factory's structure.

**Figure 1: Factory Hierarchy**



For each of the above functional levels the below items are documented:

- A. Labor Hours & Cost per military garment
- B. Problems \ Solutions \ Comments

To derive a cost per unit, the following order and production statistics are required.

**Table 5: Actual Delivery Order Data**

# of Delivery Orders	Total Units Shipped in 12 months	Average Total Units per Order	Average Units Shipped per Month [(72 orders /12 months) * 26 units]
72	1903	26	156
Garment	Total Units Shipped in 12 months	Percent Breakdown	Average Units Shipped per Month per Garment
Tunic	110	6%	9
Skirt	1120	59%	92
Slack	673	35%	55
* Data based on delivery orders received from November 1997 – October 1998, reference Appendix A, Table 36: Delivery Order Statistics.			



**Table 6: Average Quantity Ordered per Garment**

Item	Average Total Units per Order	Percent Breakdown	Average Units per Order
Tunic	26	6%	2
Skirt	26	59%	15
Slack	26	35%	9

\* Data based on delivery orders received from November 1997 – October 1998, reference Appendix A, Table 36: Delivery Order Statistics.

**Table 7: Four-Month Forecast Based on Actual Delivery Orders**

Garment	# of Units per month (ref. Table 5)	# of Units per 4 months
Tunic	9	36
Skirt	92	368
Slack	55	220

**Table 8: Units to be Delivered Per Contract**

Garment	# of Units per 6 months	# of Units per 4 months	# of Units per month
Tunic	316	211	53
Skirt	570	380	95
Slack	368	245	61

\* Quantities based on contract SP010095-D-1012/P00017.

**Table 9: Cutting Data**

Item	# of Cuts	Total Units Cut	Average Quantity Cut	Average Hours per Unit
Tunic	5	601	120	0.0469
Skirt	6	918	153	0.0323
Slack	4	324	81	0.0358

\* Reference Appendix A, Table 31 Cut/Spread Log.

**Table 10: Sewing Production Data**

Item	# of Runs	Total Units Sewn	Average Run Quantity	Average Hours per Unit
Tunic	3	110	37	0.8727
Skirt	8	867	108	0.6259
Slack	6	359	60	0.7588

\* Reference Appendix A, Table 32 Sew Production Log.

To calculate costs for ordering, handling and holding, raw materials the tunic, skirt and slack are composed of 8, 7 and 7 items, respectively, as illustrated in the following table:

**Table 11: Materials Listing**

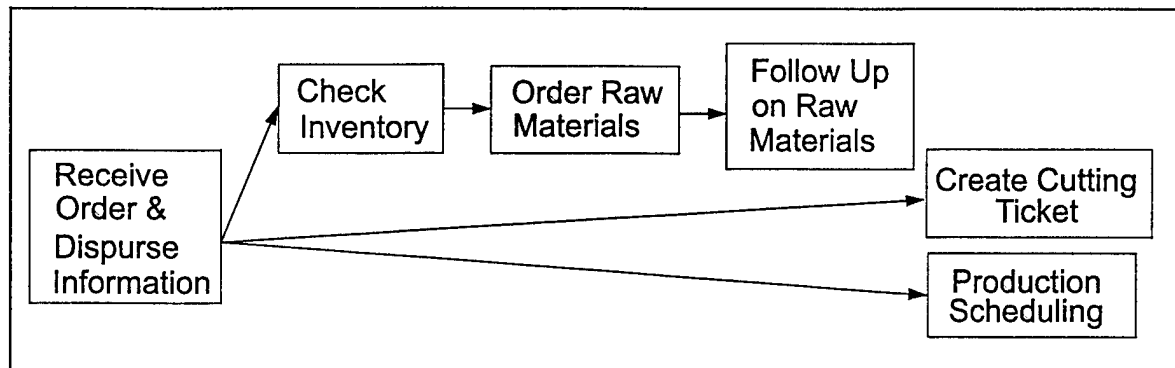
	Tunic		Skirt		Slack
1	Self (Basic Material)	1	Self (Basic Material)	1	Self (Basic Material)
2	Interlining	2	Rib	2	Rib
3	Thread	3	Thread	3	Thread
4	Zipper	4	Elastic	4	Elastic
5	Fusing	5	Identification/Care Label	5	Identification/Care Label
6	Identification/Care Label	6	Size Label	6	Size Label
7	Size Label	7	Bar Code	7	Bar Code
8	Bar Code				

Garment material costs for the tunic, slack and skirt are \$8.25, \$9.21 and \$8.87 respectively. Breakdowns are in Table 35A, 35 B and 35C in Appendix A.

### 3.1 Plan & Initiate Production

Upon the receipt of a delivery order for the tunic, skirt or slack, the below six steps are followed in the Plan & Initiate Production phase:

**Figure 2: Plan & Initiate Production**



Each of the steps represents a production cost element and is documented in further detail, as shown below:

1. Receive Initial Order & Disburse Information - The production manager receives the delivery orders via the Electronic Data Interchange (EDI), version Eagle Translator 4.0. Using EDI, the production manager views the order information on-line and then prints a hard copy of the delivery order to place in a production folder and passes the information to production assistant #1.

2. Check Finished Goods and WIP Inventory – To fulfill the order, production assistant #1 checks the finished goods and work-in-process (WIP) inventory levels on the Automated Supplier Apparel Production web site (ASAP). The results are marked on the hard copy of the delivery order and passed back to the production manager and cutting operator.
3. Check Raw Materials Inventory - The cutting operator determines the quantity of raw materials needed for each ordered garment and checks the raw material inventory for the supplies. The operator reports results back to the production manager.
4. Order Raw Materials - Based on the inventory information the production manager places an order(s) for the needed material(s).
5. Create Cutting Ticket – The production manager completes a cutting ticket (garment, sizes and quantities to be cut) and sends the cutting information to the cutter.
6. Schedule Production – The production manager calculates the sewing hours required and reviews the delivery order shipment dates. Production is then scheduled.

Based on these six cost elements, the labor hours per unit and the costs per unit were derived for the Plan and Initiate Production hierarchy level, as illustrated in the following table:

**Table 12: Plan & Initiate Production**

<b>Tunic</b>					
Step	Cost Element	Calculation	Labor Hours per Unit	Labor Rate per Hour	Cost per Unit
1	Receive Order & Disburse Information	(0.25hrs/order * 6% Tunics) / 2 Tunics per order	0.0075	\$23.81	\$0.18
2	Check Finished Goods & WIP Inventory	(0.40 hrs/order * 6%) / 2 Tunics	0.0120	\$14.88	\$0.18
3	Check Raw Materials Inventory	0.08 hrs/item * 8 items / 2 Tunics per order	0.3200	\$10.16	\$3.25
4	Order Raw Materials	0.08 hrs/item * 8 items / 36 Tunics per 4 months	0.0178	\$23.81	\$0.42
5	Create Cutting Ticket	0.33 hrs/cut / 120 Tunics/cut	0.0028	\$23.81	\$0.07
6	Schedule Production	0.25 hrs/run / 28 Tunics/run	0.0089	\$23.81	\$0.21
		<b>"Tunic" Total</b>			<b>\$4.31</b>
		<b>Labor Grade Totals</b>	0.0370	\$23.81	\$0.88
			0.0120	\$14.88	\$0.18
			0.3200	\$10.16	\$3.25
<b>Skirt</b>					
Step	Cost Element	Calculation	Labor Hours per Unit	Labor Rate per Hour	Cost per Unit
1	Receive Order & Disburse Information	(0.25hrs/order * 59% Skirts) / 15 Skirts per order	0.0098	\$23.81	\$0.23

2	Check Finished Goods & WIP Inventory	(0.40 hrs/order * 59%) / 15 Skirts	0.0157	\$14.88	\$0.23
3	Check Raw Materials Inventory	0.08 hrs/item * 7 items / 15 Skirts per order	0.0373	\$10.16	\$0.38
4	Order Raw Materials	0.08 hrs/item * 7 items / 368 Skirts per 4 months	0.0015	\$23.81	\$0.04
5	Create Cutting Ticket	0.33 hrs/cut / 153 Skirts/cut	0.0022	\$23.81	\$0.05
6	Schedule Production	0.25 hrs/run / 108 Skirts/run	0.0023	\$23.81	\$0.06
		<b>"Skirt" Total</b>			<b>\$0.99</b>
		<b>Labor Grade Totals</b>	0.0158	\$23.81	\$0.38
			0.0157	\$14.88	\$0.23
			0.0373	\$10.16	\$0.38
<b>Slack</b>					
<b>Step</b>	<b>Cost Element</b>	<b>Calculation</b>	<b>Labor Hours per Unit</b>	<b>Labor Rate per Hour</b>	<b>Cost per Unit</b>
1	Receive Order & Disburse Information	(0.25hrs/order * 35% Slacks) / 9 Slacks per order	0.0097	\$23.81	\$0.23
2	Check Finished Goods & WIP Inventory	(0.40 hrs/order * 35%) / 9 Slacks	0.0156	\$14.88	\$0.23
3	Check Raw Materials Inventory	0.08 hrs/item * 7 items / 9 Slacks per order	0.0622	\$10.16	\$0.63
4	Order Raw Materials	0.08 hrs/item * 7 items / 220 Slacks	0.0025	\$23.81	\$0.06
5	Create Cutting Ticket	0.33 hrs/cut / 81 Slacks/cut	0.0041	\$23.81	\$0.10
6	Schedule Production	0.25 hrs/run / 45 Slacks/run	0.0056	\$23.81	\$0.13
		<b>"Slack" Total</b>			<b>\$1.39</b>
		<b>Labor Grade Totals</b>	0.0219	\$23.81	\$0.52
			0.0156	\$14.88	\$0.23
			0.0622	\$10.16	\$0.63
Note: The Labor Hours used above are estimations provided by Cal Poly's production manager and assistant.					

The single issue experienced in the Plan and Initiate Production hierarchy level is documented as follows:

1. Incorrect Contract Forecast – For the three garments, the total units ordered versus the contract's projections were 31% less. The greatest variance is the quantity of tunics actually ordered versus the contract's projections - 55 ordered versus 310 projected, a difference of 464%. These figures are based on data collected during the 12-month period of November 1997 to October 1998 and are summarized in the below table.

**Table 13: Actual Orders versus Contract Projections, Summary**

Garment	Actual Orders for 12 month period	Average Orders for 6 month period based on Actual	Contract Orders for 6 months	Difference of Actual minus Contract for 6 months	% Difference
Tunic	110	55	310	-255	464%
Skirt	1120	560	570	-10	2%
Slack	673	337	368	-32	9%
<b>Totals</b>	<b>1903</b>	<b>952</b>	<b>1248</b>	<b>-297</b>	<b>31%</b>

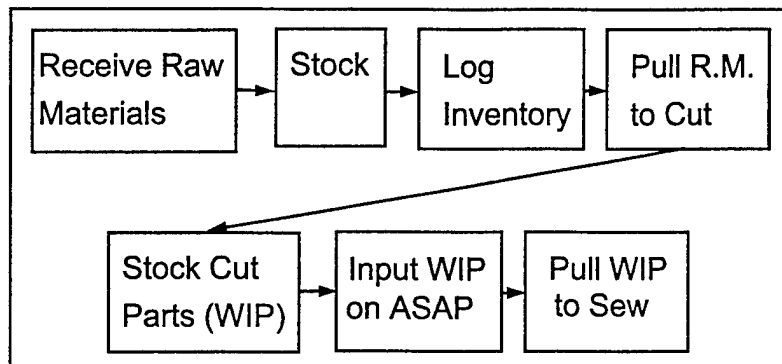
\* Reference Appendix A, Tables 33 & 36: Delivery Orders for data breakdown by size.

At the start of regular production, Cal Poly manufactured the tunics according to the contract's projections. This resulted in a high tunic inventory level of 154 units in January 1998 and Cal Poly stopping all tunic production until November 1998, an eleven-month duration. The stoppage negatively impacted sewing efficiencies.

### 3.2 Manage Raw Material Inventory

Once orders are placed for the raw materials in the Plan and Initiate Production hierarchy level, the Demo performs the following procedure:

**Figure 3: Manage Raw Materials**



Each of the steps represent a production cost element for the Manage Raw Material Inventory hierarchy level and is defined next:

1. Receive Raw Materials - Production assistant #2 receives the raw materials (including government furnished material (GFM)) from the shipper, verifying that the item and the quantity received matches the packing list. No other inspection is performed. Raw materials are received for approximately four months of supply for the three garments, as illustrated in the following table.

**Table 14: GFM Order Quantity**

	Yards	Units Ordered*	Total Yards	Yards per Roll	# of Rolls
Tunic	1.22	36	43.92	100	1.0
Skirt	1.33	368	489.44	100	5.0
Slack	1.44	220	316.8	100	4.0
* Units Ordered based on Table 7: Four-Month Forecast.					

2. Stock Raw Materials - All raw materials and GFM are moved into storage containers by production assistant #2.
3. Inventory Log - Only GFM is logged into inventory. The roll number and quantity received is entered into the logbook.
4. Pull Material for Cutting - The cutting operator obtains the required GFM rolls from inventory and transports the rolls to the spreading table.
5. Stock Cut Parts - After cut and bundle, the cutting operator stocks the prepared parts (work-in-process (WIP)) and reports quantities to production assistant #1.
6. Input WIP on ASAP - Production Assistant #1 inputs the WIP quantities on the Automated Supplier Apparel Production (ASAP) web site.
7. Pull Cut Parts & Trim for Sewing - Production assistant #2 obtains the cut parts and trim supplies from inventory and transports all to the sewing area.

For each of the above cost elements, the labor hours and costs per unit are calculated in the following table:

**Table 15: Manage Raw Materials**

Tunic					
Step	Cost Element	Calculation	Labor Hours per Unit	Labor Rate per Hour	Cost per Unit
1	Receive Raw Materials	$[(0.08 \text{ hrs/item} * 8 \text{ items}) + (0.17 \text{ hrs/roll} * 1 \text{ roll})] / 36 \text{ Tunics per 4 months}$	0.0225	\$7.12	\$0.1602
2	Stock	$[(0.08 \text{ hrs/item} * 8 \text{ items}) + (0.08 \text{ hrs/roll} * 1 \text{ roll})] / 36 \text{ Tunics}$	0.0200	\$7.12	\$0.1424
3	Log Inventory, GFM only	$0.08 \text{ hrs/roll} * 1 \text{ roll} / 36 \text{ Tunics}$	0.0022	\$7.12	\$0.0158
4	Pull Raw Materials for Cutting	$0.06 \text{ hrs/roll} * 1 \text{ roll} / 120 \text{ Tunics}$	0.0005	\$10.16	\$0.0051
5	Stock Cut Parts	$0.50 \text{ hrs/cut} / 120 \text{ Tunics}$	0.0042	\$10.16	\$0.0423
6	Input WIP on ASAP	$0.17 \text{ hrs/cut} / 120 \text{ Tunics}$	0.0014	\$14.88	\$0.0211
7	Pull Cut Parts & Trim	$0.25 \text{ hrs/run} / 28 \text{ Tunics/run}$	0.0089	\$7.12	\$0.0636

	for Sewing				
		<b>"Tunic" Total</b>			<b>\$0.45</b>
		<b>Labor Grade Totals</b>	0.0047	\$10.16	\$0.0474
			0.0014	\$14.88	\$0.0211
			0.0537	\$7.12	\$0.3820
<b>Skirt</b>					
Step	Cost Element	Calculation	Labor Hours per Unit	Labor Rate per Hour	Cost per Unit
1	Receive Raw Materials	$[(0.08 \text{ hrs/item} * 7 \text{ items}) + (0.17 \text{ hrs/roll} * 5 \text{ rolls})] / 368 \text{ Skirts per 4 months}$	0.0038	\$7.12	\$0.0273
2	Stock	$[(0.08 \text{ hrs/item} * 7 \text{ items}) + (0.08 \text{ hrs/roll} * 5 \text{ rolls})] / 368 \text{ Skirts per 4 months}$	0.0026	\$7.12	\$0.0186
3	Log Inventory, GFM only	0.08 hrs/roll * 5 roll / 368 Skirts	0.0011	\$7.12	\$0.0077
4	Pull Raw Materials for Cutting	0.06 hrs/roll * 5 roll/153 Skirts	0.0020	\$10.16	\$0.0199
5	Stock Cut Parts	0.50 hrs/cut / 153 Skirts	0.0033	\$10.16	\$0.0332
6	Input WIP on ASAP	0.17 hrs/cut / 153 Skirts	0.0011	\$14.88	\$0.0165
7	Pull Cut Parts & Trim for Sewing	0.25 hrs/run / 108 Skirts/run	0.0023	\$7.12	\$0.0165
		<b>"Skirt" Total</b>			<b>\$0.14</b>
		<b>Labor Grade Totals</b>	0.0052	\$10.16	\$0.0531
			0.0011	\$14.88	\$0.0165
			0.0098	\$7.12	\$0.0701
<b>Slack</b>					
Step	Cost Element	Calculation	Labor Hours per Unit	Labor Rate per Hour	Cost per Unit
1	Receive Raw Materials	$[(0.08 \text{ hrs/item} * 7 \text{ items}) + (0.17 \text{ hrs/roll} * 4 \text{ rolls})] / 220 \text{ Slacks per 4 months}$	0.0060	\$7.12	\$0.0427
2	Stock	$[(0.08 \text{ hrs/item} * 7 \text{ items}) + (0.08 \text{ hrs/roll} * 4 \text{ rolls})] / 220 \text{ Slacks per 4 months}$	0.0044	\$7.12	\$0.0311
3	Log Inventory, GFM only	0.08 hrs/roll * 4 rolls / 220 Slacks	0.0015	\$7.12	\$0.0104
4	Pull Raw Materials for Cutting	0.06 hrs/roll * 4 rolls/81 Slacks	0.0030	\$10.16	\$0.0301
5	Stock Cut Parts	0.50 hrs/cut / 81 Slacks	0.0062	\$10.16	\$0.0627
6	Input WIP on ASAP	0.17 hrs/cut / 81 Slacks	0.0021	\$14.88	\$0.0312
7	Pull Cut Parts & Trim for Sewing	0.25 hrs/run / 45 Slacks/run	0.0056	\$7.12	\$0.0396
		<b>"Slack" Total</b>			<b>\$0.25</b>
		<b>Labor Grade Totals</b>	0.0091	\$10.16	\$0.0928
			0.0021	\$14.88	\$0.0312

			0.0174	\$7.12	\$0.1237
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Note: the Cal Poly production manager bases The above Labor Hours on estimations.

The problem experienced in the Manage Raw Materials hierarchy level is:

1. **Storage Problem** – The MMDU tunic, skirt and slack require a total of 9 additional trim materials, excluding government furnished material, for construction. Reference section 3.0 for the material listing of each garment. For two of the trim materials, the size and bar code labels, 15 types of labels are ordered to account for the 5 different garment sizes. Cal Poly experienced difficulty in the inventory process due to the large variety and quantity of trim materials. No formal inventory accounting system is in place at Cal Poly.

In the spring of 1999, a direct result of Cal Poly's inventory difficulty occurred with a lack of adequate supply for bias seam tape for the tunic. This problem stopped production of the tunic at the bias operation. The impact was lower sewing efficiencies due to additional material handling and stopping/re-starting the tunic sew operations.

As stated in Cal Poly's Maternity Battle Dress Uniform – Technical Report, to resolve the inventory problem Cal Poly needs to develop a procedure for the inventory of the garments' trim materials. The procedure is to include steps for:

- Initially logging the items and quantities received from a vendor.
- Storing the items in individual containers.
- Logging out used quantities.

### 3.3 Develop Patterns and Markers

In section 2.0 – Pre-Production Costs, the expense of developing patterns and markers for the MMDU tunic, slack and skirt is calculated. Within this section, the continual labor costs for the rework of patterns and markers, and the printing of markers per production cut are calculated. From Cal Poly's cutting log for December 1998 – June 1999 (reference Appendix A, Table 31 for complete cutting data), the number of markers per unit is derived for each garment in the below table.

**Table 16: Markers per Unit**

	# of Markers Used	Units Cut	Markers per Unit
<b>Tunic</b>	23	601	0.0383
<b>Skirt</b>	12	918	0.0131
<b>Slack</b>	9	324	0.0278

The figures above are used for the labor and cost allocation for the Develop Patterns and Markers hierarchy level. The labor and costs per unit are illustrated in the below table.



**Table 17: Develop Patterns & Markers**

<b>Tunic</b>					
<b>Step</b>	<b>Cost Element</b>	<b>Calculation</b>	<b>Labor Hours per Unit</b>	<b>Labor Rate per Hour</b>	<b>Cost per Unit</b>
1	Print Markers	0.20 hrs/marker * 0.0383 markers/tunic	0.0077	\$10.16	\$0.08
2	Rework Tunic Pattern & Grading	1.5 hrs / 2016 contract est. total units	0.0007	\$35.00	\$0.03
3	Rework Tunic Markers	2.0 hrs / 2016 contract est. total units	0.0010	\$35.00	\$0.03
		<b>"Tunic" Total</b>			<b>\$0.14</b>
		<b>Labor Grade Totals</b>	0.0077	\$10.16	\$0.08
			0.0007	\$35.00	\$0.03
<b>Skirt</b>					
<b>Step</b>	<b>Cost Element</b>	<b>Calculation</b>	<b>Labor Hours per Unit</b>	<b>Labor Rate per Hour</b>	<b>Cost per Unit</b>
1	Print Markers	0.20 hrs/marker * 0.0131 markers/skirt	0.0026	\$10.16	\$0.03
		<b>"Skirt" Total</b>			<b>\$0.03</b>
		<b>Labor Grade Totals</b>	0.0026	\$10.16	\$0.03
<b>Slack</b>					
<b>Step</b>	<b>Cost Element</b>	<b>Calculation</b>	<b>Labor Hours per Unit</b>	<b>Labor Rate per Hour</b>	<b>Cost per Unit</b>
1	Print Markers	0.20 hrs/marker * 0.0278 markers/slack	0.0056	\$10.16	\$0.06
		<b>"Slack" Total</b>			<b>\$0.06</b>
		<b>Labor Grade Totals</b>	0.0056	\$10.16	\$0.06

\* The cutting operator and the pattern maker base Labor hours on estimations.

The problem experienced in the Develop Patterns and Markers hierarchy level is:

1. Low Pocket Placement – Marine Corp personnel indicated the pocket on the tunic was placed to low on the garment as a result the pocket hung lower than the bottom hem. In January 1999, the DSCP approved a pattern change and Cal Poly reduced the size of the pocket and raised the alignment notches on the body of the garment. The problem was corrected with these changes. The pattern maker spent an estimated 1.5 hours correcting the pattern and grading, and 2.0 hours reworking the markers for all the tunic sizes.

### 3.4 Spread, Cut and Bundle

For each cut, one or more markers are used depending upon the number of sizes cut. The three stages of the cutting process are defined below:

1. Spread – Due to the low volume, the marker length and sets of cut parts vary with each cut.
2. Cut - Cal Poly uses Lectra Cutter Machine, Vector 2500.
3. Bundle - The cutting operator prints bundle tickets and places them with each bundle. The bundles are placed in boxes for storage.

To derive a cost for the spread, cut and bundle operation, the labor rates calculated from actual hours and units produced is used and previously illustrated in Table 8: Cutting Data. The labor rates for each garment are calculated to determine the costs for the tunic, slack and skirt.

**Table 18: Spread, Cut & Bundle**

<b>Tunic</b>					
Step	Cost Element	Calculation	Labor Hours per Unit	Labor Rate per Hour	Cost per Unit
1	Spread, Cut & Bundle	0.0469 hrs/unit	0.0469	\$10.16	\$0.48
		<b>"Tunic" Total</b>			<b>\$0.48</b>
		<b>Labor Grade Totals</b>	0.0469	\$10.16	\$0.48
<b>Skirt</b>					
Step	Cost Element	Calculation	Labor Hours per Unit	Labor Rate per Hour	Cost per Unit
1	Spread, Cut & Bundle	0.0323 hrs/unit	0.0323	\$10.16	\$0.33
		<b>"Skirt" Total</b>			<b>\$0.33</b>
		<b>Labor Grade Totals</b>	0.0323	\$10.16	\$0.33
<b>Slack</b>					
Step	Cost Element	Calculation	Labor Hours per Unit	Labor Rate per Hour	Cost per Unit
1	Spread, Cut & Bundle	0.0358 hrs/unit	0.0358	\$10.16	\$0.36
		<b>"Slack" Total</b>			<b>\$0.36</b>
		<b>Labor Grade Totals</b>	0.0358	\$10.16	\$0.36
* The labor hours above are based on Cal Poly's cutting operator's log of reported hours and units cut, reference Appendix A, Table 31.					

The problem encountered in the Spread, Cut and Bundle hierarchy level is:

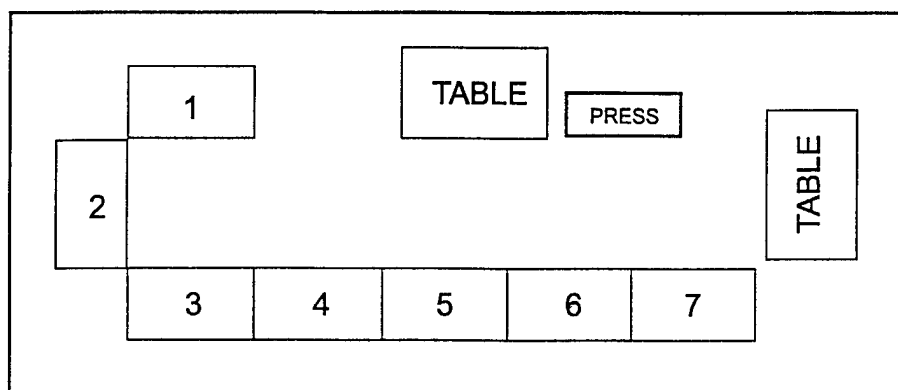
1. Small Lot Manufacturing – Due to the small lot size of each of the garments' multiple sizes, the time spent spreading, cutting and bundling becomes proportionately higher. The only way to reduce the cutting cost is to cut more of each size per marker. However, this could result in a high inventory of cut parts.

### 3.5 Sew, Finish and Inspect

Cal Poly produces the MMDU tunic, skirt and slack using the Toyota Sew System (TSS). The TSS was selected for manufacturing the garments because it is the fastest method for producing a finished product. With TSS, a garment is walked through all of the sewing operations. There is no staging of bundles at sew operations. Also, TSS requires the least number of employees. Cal Poly only assigns two sew operators for the manufacturing of the MMDU garments. One sew operator has remained constant with the entire production run of the MMDU contract. The second operator changes and is pulled from one of the other sew teams on an as needed basis. For these reasons, the TSS was determined to be the best method for producing low volume garments with a short 14-day lead-time, as is the case of the MMDU contract.

The layout of the equipment used for production of the MMDU is illustrated and described in the below figure and table.

**Figure 4: TSS Floor Layout**



**Table 19: Equipment Listing**

Location #	Machine Description	MFE Name
1	5 Thread Overlock	Brother M4-V61-955
2	3 Thread Overlock	Singer 831U
3	Single Needle – Auto	Juki DDL-5550N-7
4	Single Needle – Auto	Brother DB2-B737413
5	5 Thread Overlock	Brother M4-V61-955
6	Blind Stitch	Union Special 376002C
7	Bar Tack	Juki LK-1852
Press	Steam Iron	Sussman Aqua Gold

The maternity tunic has far more construction features including a front pleat/yoke treatment, a zipper and facings, pockets and bartacking. The slack and skirt are plain, pull-on styles with elasticized waists requiring far less construction time.

In the following table the percent efficiency to standard for each garment is calculated.

**Table 20: Percent Efficiency to Standard**

	SAM's	SAH's	Actual "Average" Hours (per Reported Hours & Units)	% Efficiency to SAH's
Tunic	42.041	0.701	0.873	80.29%
Skirt	16.910	0.282	0.626	45.03%
Slack	25.398	0.423	0.759	55.79%
- Reference Appendix B – For complete documentation of SAM's per operation. - Reference Section 3.0, Table 10 – Sew Production Data for computation of Actual "Average" Hours.				

The low sew efficiencies can be attributed to several factors:

1. Non-continuous Work – Based on the average units per month and the average sew hours per unit (reference tables 6 & 9 in section 3.0), the MMDU contract averages 107.16 sew, finish and inspect labor hours. For the TSS two person team working a combined 80 hours per week, the MMDU contract provides approximately 1.34 weeks of work per month (107.16 divided by 80). This low volume of work does not allow the operators to become 100% efficient.
2. Problems from Previous Sections – The problems identified in the previous sections also directly impact sew efficiencies, and are summarized below.
3. Change in Number of Operators -- Sewing efficiencies for the slack and skirt were less than the tunic because the number of operators producing these items was oftentimes as few as one operator. In addition, the operators were not always the same individuals. The irregularity in the orders caused a lack of stability in the module used to produce the items. Efficiencies on the tunic were higher due to the same operators being used each time to produce the tunics. The more complex garment required operators with experience.

**Table 21: Problems Impacting Production Summary**

Section	Problem	Impact on Production
3.1 Plan & Initiate Production	Incorrect Contract Forecast	Due to the lack of tunic orders, Cal Poly incurred a high inventory of tunics and stopped production for an eleven-month duration. The lack of continuity results in a loss of sewing efficiency.
3.2 Manage Raw Materials	Storage Problem for Trim Materials	Lack of bias seam tape for the tunic stopped production, causing an increase in material handling and a loss of sewing efficiency.
3.4 Spread, Cut, & Bundle	Small Lot Size	Small bundle sizes lower sew efficiencies due to the material handling being divided by a small quantity of units.

To increase production efficiency and reduce costs, each of the issues listed needs to be addressed. For possible solutions to the problems, reference the identified sections in this report.

For the Sew, Finish and Inspect hierarchy cost calculation, the labor rate is based on the actual reported hours and units produced December 1998 – June 1999, reference Appendix A – Table 32: Sew Production Data for further documentation. The labor and costs per unit are shown in the following table:

**Table 22: Sew, Finish & Inspect**

<b>Tunic</b>					
Step	Cost Element	Calculation	Labor Hours per Unit	Labor Rate per Hour	Cost per Unit
1	Sew, Finish and Inspect	0.8727 hrs/unit	0.8727	\$9.00	\$7.85
		<b>"Tunic" Total</b>			<b>\$7.85</b>
		<b>Labor Grade Totals</b>	0.8727	\$9.00	\$7.85
<b>Skirt</b>					
Step	Cost Element	Calculation	Labor Hours per Unit	Labor Rate per Hour	Cost per Unit
1	Sew, Finish and Inspect	0.6259 hrs/unit	0.6259	\$9.00	\$5.63
		<b>"Skirt" Total</b>			<b>\$5.63</b>
		<b>Labor Grade Totals</b>	0.6259	\$9.00	\$5.63
<b>Slack</b>					
Step	Cost Element	Calculation	Labor Hours per Unit	Labor Rate per Hour	Cost per Unit
1	Sew, Finish and Inspect	0.7588 hrs/unit	0.7588	\$9.00	\$6.83
		<b>"Slack" Total</b>			<b>\$6.83</b>
		<b>Labor Grade Totals</b>	0.7588	\$9.00	\$6.83

\* Labor rates are above are based on reported production hours and units, reference Appendix A, Table 32 – Sew Production Data.

### 3.6 Manage Finished Goods Inventory

For the MMDU contract, Cal Poly maintained an inventory for the three garments. The average monthly inventory levels and approximate number of months of supply are reported below:

**Table 23: Approximate Inventory Level Supply**

Garment	Actual Orders per Month	Ave. Monthly Inventory Level	Approximate # of Months of Supply
Tunic	9	126	14.00
Skirt	92	135	1.47
Slack	55	56	1.02
<ul style="list-style-type: none"> <li>For computation of Actual Orders per Month, reference Section 3.0, Table 5: Actual Delivery Order Data.</li> <li>For computation of Average Monthly Inventory Level, reference Table 34: Monthly Inventory Level.</li> </ul>			

The cost elements of the Manage Finished Goods Inventory hierarchy level are attributed to the following:

1. The stocking and logging of the garments in Cal Poly's inventory by production assistant #2.
2. The inputting of the inventory figures on the Automated Supplier Apparel Production (ASAP) web site by production assistant #1.

The labor and cost per unit are illustrated in the following table:

**Table 24: Finished Goods Inventory**

<b>Tunic</b>					
<b>Step</b>	<b>Cost Element</b>	<b>Calculation</b>	<b>Labor Hours per Unit</b>	<b>Labor Rate per Hour</b>	<b>Cost per Unit</b>
1	Stock Finished Goods	0.0048 hrs/unit	0.0048	\$7.12	\$0.0342
2	Input Inventory on ASAP	0.0833 hrs/ 28 units/sew run	0.0030	\$14.88	\$0.0443
		<b>"Tunic" Total</b>			<b>\$0.08</b>
		<b>Labor Grade Totals</b>	0.0048	\$7.12	\$0.0342
			0.0030	\$14.88	\$0.0443
<b>Skirt</b>					
<b>Step</b>	<b>Cost Element</b>	<b>Calculation</b>	<b>Labor Hours per Unit</b>	<b>Labor Rate per Hour</b>	<b>Cost per Unit</b>
1	Stock Finished Goods	0.0048 hrs/unit	0.0048	\$7.12	\$0.0342
2	Input Inventory on ASAP	0.0833 hrs/ 108 units/sew run	0.0008	\$14.88	\$0.0115
		<b>"Skirt" Total</b>			<b>\$0.05</b>
		<b>Labor Grade Totals</b>	0.0048	\$7.12	\$0.0342
			0.0008	\$14.88	\$0.0115
<b>Slack</b>					
<b>Step</b>	<b>Cost Element</b>	<b>Calculation</b>	<b>Labor Hours per Unit</b>	<b>Labor Rate per Hour</b>	<b>Cost per Unit</b>
1	Stock Finished Goods	0.0048 hrs/unit	0.0048	\$7.12	\$0.0342
2	Input Inventory on ASAP	0.0833 hrs/ 45 units/sew run	0.0019	\$14.88	\$0.0275
		<b>"Slack" Total</b>			<b>\$0.06</b>
		<b>Labor Grade Totals</b>	0.0048	\$7.12	\$0.0342
			0.0019	\$14.88	\$0.0275

\* The Labor Hours used above are estimations provided by Cal Poly's production manager.

The following issues were experienced within the Finished Goods Inventory hierarchy level.

1. High Tunic Inventory – As stated in the Plan & Initiate Production Hierarchy, section 3.1, due to an incorrect forecast Cal Poly built a large inventory of tunics. Based on ordering data, it was calculated in Table 22 that there was a 14-month supply of tunics.

These units represent both a physical cost and an opportunity cost for Cal Poly. The physical cost is the material cost and the labor hours spent to produce the tunics, and is illustrated in the following table:

**Table 25: Cost of Inventory**

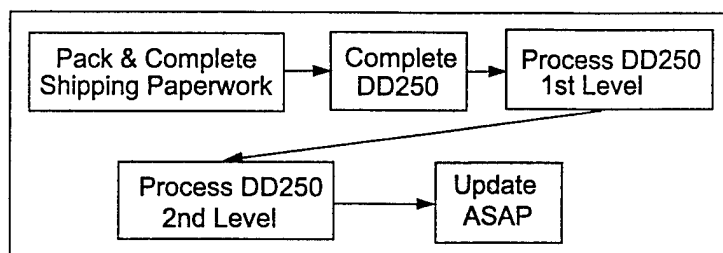
	Cost/Unit	Ave. Monthly Inventory Level	Total Cost
Materials' Cost	\$8.25	126	\$1,039.50
3.4 Cut	\$0.48	126	\$60.48
3.5 Sew, Finish & Inspect	\$7.85	126	\$989.10
		<b>Total</b>	<b>\$2,089.08</b>
* For Materials' Cost breakdown, reference Appendix A, Table 35 – Material Cost Tunic.			

The opportunity cost is the loss of the production hours spent producing the tunics that could have been used to produce other money generating garments. The additional risk of carrying inventory with a low turnover rate, 14 months for the tunic, is that the product may become obsolete and costs are never recovered. In this particular case, the DSCP consumed all of the old style tunic before placing orders for the new style.

### 3.7 Ship & Invoice

For the MMDU contract, Cal Poly performs the steps illustrated in the following figure to ship and invoice the tunic, skirt and slack:

**Figure 5: Ship & Invoice**



Each of the steps above represents a cost element in the Ship and Invoice hierarchy level and are defined in further detail below:

1. Pack & Complete Shipper Paperwork - Production assistant #2 packs the final shipment boxes, secures the boxes with tape, identifies shipping addresses and completes shipping paperwork.
2. Complete DD250 – Production manager completes all fields on the DD250 form.
3. Process DD250, 1<sup>st</sup> Level - Cal Poly's military accounts administrator reviews the DD250, signs off on the production batch sheet, logs the order into a spreadsheet, posts the order to

the Cal Poly's internal financial ledger, copies the DD250 for filing and sends the original DD250 to Foundation for billing.

4. Process DD250, 2<sup>nd</sup> Level - The Cal Poly Demo Director reviews and signs off the DD250.
5. Update Inventory on ASAP – Production Assistant #2 updates finished goods inventory on the Automated Supplier Apparel Production (ASAP) web site.

The following table illustrates the labor hours and costs per unit for each of the defined cost elements for the Ship and Invoice hierarchy level.

**Table 26: Ship & Invoice**

<b>Tunic</b>					
<b>Step</b>	<b>Cost Element</b>	<b>Calculation</b>	<b>Labor Hours per Unit</b>	<b>Labor Rate per Hour</b>	<b>Cost per Unit</b>
1	Pack & Complete Shipper Paperwork	0.0843 Hrs/unit	0.0843	\$7.12	\$0.6002
2	Complete DD250	0.1667 Hrs/Shipment / 2 tunics/order	0.0834	\$23.81	\$1.9846
3	Process DD250, 1st Level	0.33 hrs/shipment / 2	0.0165	\$19.67	\$0.3246
4	Process DD250, 2nd Level	0.08 hrs/shipment / 2	0.0400	\$78.69	\$3.1476
5	Input Inventory on ASAP	0.0833 hrs/shipment / 2	0.0417	\$14.88	\$0.6198
		<b>"Tunic" Total</b>			<b>\$6.68</b>
		<b>Labor Grade Totals</b>	0.0400	\$78.69	\$3.1476
			0.0834	\$23.81	\$1.9846
			0.0165	\$19.67	\$0.3246
			0.0417	\$14.88	\$0.6198
			0.0843	\$7.12	\$0.6002
<b>Skirt</b>					
<b>Step</b>	<b>Cost Element</b>	<b>Calculation</b>	<b>Labor Hours per Unit</b>	<b>Labor Rate per Hour</b>	<b>Cost per Unit</b>
1	Pack & Complete Shipper Paperwork	0.0843 Hrs/unit	0.0843	\$7.12	\$0.6002
2	Complete DD250	0.1667 Hrs/Shipment / 15 skirts/order	0.0111	\$23.81	\$0.2646
3	Process DD250, 1st Level	0.33 hrs/shipment / 15	0.0022	\$19.67	\$0.0433
4	Process DD250, 2nd Level	0.08 hrs/shipment / 15	0.0053	\$78.69	\$0.4197
5	Input Inventory on ASAP	0.0833 hrs/shipment / 15	0.0056	\$14.88	\$0.0826
		<b>"Skirt" Total</b>			<b>\$1.41</b>
		<b>Labor Grade Totals</b>	0.0053	\$78.69	\$0.4197
			0.0111	\$23.81	\$0.2646
			0.0022	\$19.67	\$0.0433
			0.0056	\$14.88	\$0.0826
			0.0843	\$7.12	\$0.6002



Slack					
Step	Cost Element	Calculation	Labor Hours per Unit	Labor Rate per Hour	Cost per Unit
1	Pack & Complete Shipper Paperwork	0.0843 Hrs/unit	0.0843	\$7.12	\$0.6002
2	Complete DD250	0.1667 Hrs/Shipment / 9 slacks/order	0.0185	\$23.81	\$0.4410
3	Process DD250, 1st Level	0.33 hrs/shipment / 9	0.0037	\$19.67	\$0.0721
4	Process DD250, 2nd Level	0.08 hrs/shipment / 9	0.0089	\$78.69	\$0.6995
5	Input Inventory on ASAP	0.0833 hrs/shipment / 9	0.0093	\$14.88	\$0.1377
		<b>"Slack" Total</b>			<b>\$1.95</b>
		<b>Labor Grade Totals</b>	0.0089	\$78.69	\$0.6995
			0.0185	\$23.81	\$0.4410
			0.0037	\$19.67	\$0.0721
			0.0093	\$14.88	\$0.1377
			0.0843	\$7.12	\$0.6002
* The Labor Hours used above are estimations provided by Cal Poly's production manager and assistant.					

The only problem experienced in the Ship & Invoice hierarchy level follows.:

1. Address Availability – At the start of the MMDU contract the addresses for the destination codes were not easily available. This was a frustration because the MMDU are custom ordered and shipped to many different locations around the world. DSCP eliminated the problem in Fall of 1998 by the providing the addresses on its web site.

## 4.0 Summary of Labor Hours & Costs

Based on the previous sections 2.0 and 3.1 through 3.7, the below table is created illustrating the Hierarchy Costs with Labor Breakdown for the MMDU tunic, skirt and slack.

**Table 27: Hierarchy Cost w/ Labor Breakdown**

Tunic					
Section	Cost Element	Total Hours per Unit per Labor Grade	\$ per Hour	Total Cost per Unit per Labor Grade	Total Cost per Unit per Hierarchy Level
2.0	Pre-Production	---	---	\$1.0500	\$1.05
3.1	Plan & Initiate Production	0.0370	\$23.81	\$0.8799	\$4.31
		0.0120	\$14.88	\$0.1786	
		0.3200	\$10.16	\$3.2512	
3.2	Manage Raw Materials	0.0047	\$10.16	\$0.0474	\$0.45
		0.0014	\$14.88	\$0.0211	
		0.0537	\$7.12	\$0.3820	
3.3	Develop Patterns & Markers	0.0077	\$10.16	\$0.0778	\$0.14
		0.0017	\$35.00	\$0.0608	
3.4	Spread, Cut & Bundle	0.0469	\$10.16	\$0.4765	\$0.48
3.5	Sew, Finish & Inspect	0.8727	\$9.00	\$7.8543	\$7.85
3.6	Manage Finished Goods Inventory	0.0048	\$7.12	\$0.0342	\$0.08
		0.0030	\$14.88	\$0.0443	
3.7	Ship & Invoice	0.0400	\$78.69	\$3.1476	\$6.68
		0.0834	\$23.81	\$1.9846	
		0.0165	\$19.67	\$0.3246	
		0.0417	\$14.88	\$0.6198	
		0.0843	\$7.12	\$0.6002	
	<b>Tunic Total</b>	<b>1.6313</b>	<b>---</b>	<b>\$21.0347</b>	<b>\$21.03</b>
	<b>Tunic Total + Materials</b>				<b>\$29.28</b>

Skirt					
Section	Cost Element	Total Hours per Unit per Labor Grade	\$ per Hour	Total Cost per Unit per Labor Grade	Total Cost per Unit per Hierarchy Level
2.0	Pre-Production	---	---	\$1.0500	\$1.05
3.1	Plan & Initiate Production	0.0158	\$23.81	\$0.3768	\$0.99
		0.0157	\$14.88	\$0.2341	
		0.0373	\$10.16	\$0.3793	
3.2	Manage Raw Materials	0.0052	\$10.16	\$0.0531	\$0.14
		0.0011	\$14.88	\$0.0165	
		0.0098	\$7.12	\$0.0701	
3.3	Develop Patterns & Markers	0.0026	\$10.16	\$0.0266	\$0.03

3.4	Spread, Cut & Bundle	0.0323	\$10.16	\$0.3282	\$0.33
3.5	Sew, Finish & Inspect	0.6259	\$9.00	\$5.6331	\$5.63
3.6	Manage Finished Goods Inventory	0.0048	\$7.12	\$0.0342	\$0.05
		0.0008	\$14.88	\$0.0115	
3.7	Ship & Invoice	0.0053	\$78.69	\$0.4197	\$1.41
		0.0111	\$23.81	\$0.2646	
		0.0022	\$19.67	\$0.0433	
		0.0056	\$14.88	\$0.0826	
		0.0843	\$7.12	\$0.6002	
	<b>Skirt Total</b>	<b>0.8600</b>	<b>---</b>	<b>\$9.2958</b>	<b>\$9.62</b>
	<b>Skirt total + Materials</b>				<b>\$18.49</b>

Slack					
Section	Cost Element	Total Hours per Unit per Labor Grade	\$ per Hour	Total Cost per Unit per Labor Grade	Total Cost per Unit per Hierarchy Level
2.0	Pre-Production	---	---	\$1.0500	\$1.05
3.1	Plan & Initiate Production	0.0219	\$23.81	\$0.5214	\$1.39
		0.0156	\$14.88	\$0.2315	
		0.0622	\$10.16	\$0.6322	
3.2	Manage Raw Materials	0.0091	\$10.16	\$0.0928	\$0.25
		0.0021	\$14.88	\$0.0312	
		0.0174	\$7.12	\$0.1237	
3.3	Develop Patterns & Markers	0.0056	\$10.16	\$0.0565	\$0.06
3.4	Spread, Cut & Bundle	0.0358	\$10.16	\$0.3637	\$0.36
3.5	Sew, Finish & Inspect	0.7588	\$9.00	\$6.8292	\$6.83
3.6	Manage Finished Goods Inventory	0.0048	\$7.12	\$0.0342	\$0.06
		0.0019	\$14.88	\$0.0275	
3.7	Ship & Invoice	0.0089	\$78.69	\$0.6995	\$1.95
		0.0185	\$23.81	\$0.4410	
		0.0037	\$19.67	\$0.0721	
		0.0093	\$14.88	\$0.1377	
		0.0843	\$7.12	\$0.6002	
	<b>Slack Total</b>	<b>1.0597</b>	<b>---</b>	<b>\$11.9445</b>	<b>\$11.94</b>
	<b>Slack Total + Materials</b>				<b>\$21.15</b>

The next table, Cost Distribution by Hierarchy Level, illustrates the percent contribution for each hierarchy to the garments' total cost:

**Table 28: Cost Distribution by Hierarchy Level**

Tunic			
Section	Hierarchy Level	Cost per Unit	% of Total Cost
2.0	Pre-Production	\$1.05	4.99%
3.1	Plan & Initiate Production	\$4.31	20.49%
3.2	Manage Raw Materials	\$0.45	2.14%
3.3	Develop Patterns & Markers	\$0.14	0.66%
3.4	Spread, Cut & Bundle	\$0.48	2.27%
3.5	Sew, Finish & Inspect	\$7.85	37.35%
3.6	Manage Finished Goods Inventory	\$0.08	0.37%
3.7	Ship & Invoice	\$6.68	31.75%
	<b>Total</b>	<b>\$21.03</b>	<b>100%</b>

Skirt			
Section	Hierarchy Level	Cost per Unit	% of Total Cost
2.0	Pre-Production	\$1.05	10.91%
3.1	Plan & Initiate Production	\$0.99	10.29%
3.2	Manage Raw Materials	\$0.14	1.45%
3.3	Develop Patterns & Markers	\$0.03	0.28%
3.4	Spread, Cut & Bundle	\$0.33	3.41%
3.5	Sew, Finish & Inspect	\$5.63	58.56%
3.6	Manage Finished Goods Inventory	\$0.05	0.47%
3.7	Ship & Invoice	\$1.41	14.66%
	<b>Total</b>	<b>\$9.62</b>	<b>100%</b>

Slack			
Section	Hierarchy Level	Cost per Unit	% of Total Cost
2.0	Pre-Production	\$1.05	8.79%
3.1	Plan & Initiate Production	\$1.39	11.60%
3.2	Manage Raw Materials	\$0.25	2.07%
3.3	Develop Patterns & Markers	\$0.06	0.47%
3.4	Spread, Cut & Bundle	\$0.36	3.05%
3.5	Sew, Finish & Inspect	\$6.83	57.20%
3.6	Manage Finished Goods Inventory	\$0.06	0.52%
3.7	Ship & Invoice	\$1.95	16.34%
	<b>Total</b>	<b>\$11.94</b>	<b>100%</b>

The final table, Labor & Cost Distribution by Pay Grade, summarizes the labor hours spent by each pay grade in the manufacturing of the MMDU garments. Also, calculated is the percent contribution of each pay grade to the garment's cost.

**Table 29: Labor & Cost Distribution by Labor Grade**

Tunic					
Position	Labor Hours per Unit	% of Total Labor Hours	\$ per Hour	Cost per Unit	% of Total Cost
Pre-Production	---	---	---	\$1.05	5%
Cal Poly Demo Director	0.0400	2%	\$78.69	\$3.15	15%
Production Manager	0.1203	7%	\$23.81	\$2.86	14%
Production Assistant #1	0.0580	4%	\$14.88	\$0.86	4%
Accounts Administrator	0.0165	1%	\$19.67	\$0.32	2%
Cutting Operator	0.3792	23%	\$10.16	\$3.85	18%
Sew Operator	0.8727	53%	\$9.00	\$7.85	37%
Production Assistant #2	0.1428	9%	\$7.12	\$1.02	5%
Pattern Maker	0.0017	0%	\$35.00	\$0.06	0%
<b>Total</b>	<b>1.6313</b>	<b>100%</b>		<b>\$21.03</b>	<b>100%</b>

Skirt					
Position	Labor Hours per Unit	% of Total Labor Hours	\$ per Hour	Cost per Unit	% of Total Cost
Pre-Production	---	---	---	\$1.05	11%
Cal Poly Demo Director	0.0053	1%	\$78.69	\$0.42	4%
Production Manager	0.0269	3%	\$23.81	\$0.64	7%
Production Assistant #1	0.0232	3%	\$14.88	\$0.34	4%
Accounts Administrator	0.0022	0%	\$19.67	\$0.04	0%
Cutting Operator	0.0775	9%	\$10.16	\$0.79	8%
Sew Operator	0.6259	73%	\$9.00	\$5.63	59%
Production Assistant #2	0.0989	12%	\$7.12	\$0.70	7%
Pattern Maker	0.0000	0%	\$35.00	\$0.00	0%
<b>Total</b>	<b>0.8600</b>	<b>100%</b>		<b>\$9.62</b>	<b>100%</b>

Slack					
Position	Labor Hours per Unit	% of Total Labor Hours	\$ per Hour	Cost per Unit	% of Total Cost
Pre-Production	---	---	---	\$1.05	9%
Cal Poly Demo Director	0.0089	1%	\$78.69	\$0.70	6%
Production Manager	0.0404	4%	\$23.81	\$0.96	8%
Production Assistant #1	0.0288	3%	\$14.88	\$0.43	4%
Accounts Administrator	0.0037	0%	\$19.67	\$0.07	1%
Cutting Operator	0.1127	11%	\$10.16	\$1.15	10%
Sew Operator	0.7588	72%	\$9.00	\$6.83	57%
Production Assistant #2	0.1065	10%	\$7.12	\$0.76	6%
Pattern Maker	0.0000	0%	\$35.00	\$0.00	0%
<b>Total</b>	<b>1.0597</b>	<b>100%</b>		<b>\$11.94</b>	<b>100%</b>

## 5.0 Conclusions

This report's purpose is to illustrate what costs are incurred by a low volume manufacturing facility for a small government contract. From the collected information, Cal Poly's manufacturing costs, excluding material costs and freight, for the MMDU garments are as follows:

Tunic \$21.03  
 Skirt \$9.62  
 Slack \$11.94

The majority of cost for the production of the garments (greater than 94%) is attributed to the following three factory hierarchy levels and pre-production:

**Table 30: Highest Cost Contributors**

Hierarchy Level	Tunic		Skirt		Slack	
	Cost	%	Cost	%	Cost	%
Sew, Finish & Inspect	\$7.85	37%	\$5.63	59%	\$6.83	57%
Ship & Invoice	\$6.68	32%	\$1.41	15%	\$1.95	16%
Plan & Initiate Production	\$4.31	20%	\$1.05	11%	\$1.39	12%
Pre-Production	\$1.05	5%	\$0.99	10%	\$1.05	9%

As seen in the above table and as expected, the sewing represents the most significant cost. However, also illustrated and expected, is that for a low volume contract the indirect costs associated with processing and implementing an order (Ship & Invoice and Plan & Initiate Production in the above table) are significant cost contributors.

To further illustrate the relationship between order volume and indirect costs, the below table compares the three garments average order quantities and the percentage of indirect cost contribution:

Garments	Average Units Per Order	Percent Contribution to Mfg. Cost for Plan & Initiate Production and Ship & Invoice Hierarchy Levels
Tunic	2	54%
Slack	9	28%
Skirt	15	26%

Sewing efficiencies, as anticipated for low volume production, are lower than 100%. The sewing efficiencies calculated in Section 3.5, Table 20 are:

Tunic 80.29%  
 Skirt 45.03%  
 Slack 55.79%

For the skirt and slack, the above sew efficiencies are extremely low, even for low volume production.

Based on the findings, Cal Poly could lower total costs by:

1. Implementing an inventory control procedure for trim materials to avoid stopping and re-starting of the production process.
2. Creating a database to input and monitor actual order quantities and trends to optimize production batches without building excessive inventory.
3. Performing additional engineering studies on the sew activities to improve productivity.

In conclusion, the per unit costs of small volume contracts will be proportionately high because indirect costs are absorbed by fewer units. To help lower indirect costs, information systems for receiving orders, checking raw and finished goods inventory levels, and shipping and invoicing need to be linked within the manufacturing facility. By linking the systems, the manual (indirect) labor involved with communicating production information can be greatly reduced.

## Appendix A

The following data tables were obtained from Cal Poly's production logs for the stated time period.

**Table 31: Cut/Spread Log**

Tunic Cut/Spread Log			
Date/Cut	Pcs	Hours	
Jan99 #2040	76	5.5	
Feb99 #2051	161	7.42	
Mar99 #2057	121	5.17	
Mar99 #2065	137	6.17	
May99 #2070	106	3.92	Ave Hrs/unit
Totals	601	28.18	0.046888519
Ave Cut Qty	120.2		
Skirt Cut/Spread Log			
Date/Cut	Pcs	Hours	
Dec-98	132	3.5	
Jan99 #2039	40	1.5	
Jan99 #2041	10	1.17	
Feb99 #2050	328	8.92	
Mar99 #2060	100	2.92	
Apr99 #2068	308	11.67	Ave Hrs/unit
Totals	918	29.68	0.032331155
Ave Cut Qty	153		
Slack Cut/Spread Log			
Date/Cut	Pcs	Hours	
Feb99 #2049	232	6.42	
May99 #2069	50	2	
May99 #2073	32	2.5	
Jun99 #2074	10	0.67	Ave Hrs/unit
Totals	324	11.59	0.035771605
Ave Cut Qty	81		

**Table 32: Sew Production Log**

Tunic Sew Production Log			
Date	Pcs	Hours	
Nov-98	71	50.5	
Jan-99	6	7	
May-99	33	38.5	
			Ave Hrs/unit



<b>Totals</b>	110	96	0.87272727
<b>Ave Run Qty.</b>	27.5		
* Data is from Cal Poly's Monthly Reports for stated time period.			
<b>Skirt Sew Production Log</b>			
<b>Date</b>	<b>Pcs</b>	<b>Hours</b>	
Mar-98	131	65	
Apr-98	165	72	
May-98	13	13	
Jun-98	190	85	
Jul-98	86	43.15	
Aug-98	78	70	
Sep-98	124	130	
Oct-98	80	64.5	
			<b>Ave Hrs/unit</b>
<b>Totals</b>	867	542.65	0.62589388
<b>Ave Run Qty.</b>	108.375		
* Data is from Cal Poly's Monthly Reports for stated time period.			
<b>Slack Sew Production Log</b>			
<b>Date</b>	<b>Pcs</b>	<b>Hours</b>	
Mar-98	39	35	
Apr-98	45	40	
May-98	37	39.5	
Jun-98	97	86	
Jul-98	72	44	
Aug-98	0	0	
Sep-98	0	0	
Oct-98	0	0	
Nov-98	69	27.9	
			<b>Ave Hrs/unit</b>
<b>Totals</b>	359	272.4	0.75877437
<b>Ave Run Qty.</b>	44.875		
* Data is from Cal Poly's Monthly Reports for stated time period.			

**Table 33: Delivery Orders – Actual vs. Contract**

Tunic				
Size	Actual Orders for 12 month period	Average Orders for 6 month period based on Actual	Contract Orders for 6 months	Difference of Actual minus Contract for 6 months
X Small	0	0	20	-20
Small	13	7	46	-39
Medium	41	21	145	-124
Large	52	26	99	-73
X Large	4	2	0	2
<b>Totals</b>	<b>110</b>	<b>56</b>	<b>310</b>	<b>-254</b>

Skirt				
Size	Actual Orders for 12 month period	Average Orders for 6 month period based on Actual	Contract Orders for 6 months	Difference of Actual minus Contract for 6 months
X Small	52	26	15	11
Small	212	106	120	-14
Medium	524	262	285	-23
Large	332	166	135	31
X Large	0	0	15	-15
<b>Totals</b>	<b>1120</b>	<b>560</b>	<b>570</b>	<b>-10</b>

Slack				
Size	Actual Orders for 12 month period	Average Orders for 6 month period based on Actual	Contract Orders for 6 months	Difference of Actual minus Contract for 6 months
X Small	57	29	26	3
Small	136	68	86	-18
Medium	280	140	125	15
Large	199	100	125	-26
X Large	1	1	6	-6
<b>Totals</b>	<b>673</b>	<b>337</b>	<b>368</b>	<b>-32</b>

**Table 34: Monthly Inventory Level**

	Tunic	Skirt	Slack
Jan-98	154	179	119
Feb-98	137	54	65
Mar-98	125	68	13
Apr-98	125	108	6
May-98	125	98	39
Jun-98	125	245	105
Jul-98	102	207	122
Aug-98	102	212	39

Sep-98	102	179	22
Oct-98	110	66	7
Nov-98	180	66	75
Average per Month	126	135	56

**Table 35A: Material Cost Tunic**

Materials Used	Volume of Measure	Cost per Item	Volume Used per Tunic	Total Cost
Fabric (GFM)	yards	\$5.81	1.22	\$7.09
Interlining	yards	\$0.95	0.34	\$0.32
Zippers	each	\$0.30	1	\$0.30
Buttons	each	\$0.02	4	\$0.08
Care Label	each	\$0.03	1	\$0.03
Plastic Bag	each	\$0.07	1	\$0.07
Product ID. Label	each	\$0.01	1	\$0.01
Fusing	each	\$0.35	1	\$0.35
			<b>Total</b>	<b>\$8.25</b>

**Table 35B: Material Cost Slack**

Materials Used	Volume of Measure	Cost per Item	Volume Used per Tunic	Total Cost
Fabric (GFM)	yards	\$5.81	1.44	\$8.37
Rib trim	yards	\$3.75	0.16	\$0.60
Elastic	each	\$0.14	0.96	\$0.13
Care Label	each	\$0.03	1	\$0.03
Plastic Bag	each	\$0.07	1	\$0.07
Product ID. Label	each	\$0.01	1	\$0.01
			<b>Total</b>	<b>\$9.21</b>

**Table 35C: Material Cost Skirt**

Materials Used	Volume of Measure	Cost per Item	Volume Used per Tunic	Total Cost
Fabric (GFM)	yards	\$5.81	1.33	\$7.73
Rib trim	yards	\$3.75	0.24	\$0.90
Elastic	yards	\$0.14	0.96	\$0.13
Care Label	each	\$0.03	1	\$0.03
Plastic Bag	each	\$0.07	1	\$0.07
Product ID. Label	each	\$0.01	1	\$0.01
			<b>Total</b>	<b>\$8.87</b>

**Table 36: Delivery Order Statistics**

Delivery Order No.	Date of Order	Item	Size	No. of Units	Price/Unit paid to Cal Poly
0242	11/17/97	Tunic	Small	1	\$32.82
0242	11/17/97	Tunic	Med	1	\$32.82
0242	11/17/97	Tunic	Large	10	\$32.82
0242	11/17/97	Slack	Small	5	\$17.80
0242	11/17/97	Slack	Med	2	\$17.80
0242	11/17/97	Slack	Large	1	\$17.80
0242	11/17/97	Skirt	Med	14	\$16.30
0242	11/17/97	Skirt	Large	12	\$16.30
0245	11/20/97	Tunic	Med	7	\$32.82
0245	11/20/97	Tunic	Large	1	\$32.82
0245	11/20/97	Slack	Small	6	\$17.80
0245	11/20/97	Slack	Med	11	\$17.80
0245	11/20/97	Slack	Large	11	\$17.80
0245	11/20/97	Skirt	Small	3	\$16.30
0245	11/20/97	Skirt	Med	4	\$16.30
0245	11/20/97	Skirt	Large	3	\$16.30
0246	11/25/97	Tunic	Small	2	\$32.82
0246	11/25/97	Tunic	Med	1	\$32.82
0246	11/25/97	Tunic	X Large	4	\$32.82
0246	11/25/97	Slack	Small	1	\$17.80
0246	11/25/97	Slack	Large	2	\$17.80
0246	11/25/97	Skirt	Med	4	\$16.30
0247	12/02/97	Tunic	Med	2	\$32.82
0247	12/02/97	Slack	Med	1	\$17.80
0247	12/02/97	Skirt	Med	2	\$16.30
0248	12/09/97	Tunic	Med	1	\$32.82
0248	12/09/97	Tunic	Large	1	\$32.82
0248	12/09/97	Slack	Small	5	\$17.80
0248	12/09/97	Slack	Med	2	\$17.80
0248	12/09/97	Slack	Large	10	\$17.80

0248	12/09/97	Skirt	Small	5	\$16.30
0248	12/09/97	Skirt	Med	14	\$16.30
0249	12/11/97	Tunic	Large	1	\$32.82
0249	12/11/97	Slack	Med	1	\$17.80
0249	12/11/97	Slack	Large	1	\$17.80
0249	12/11/97	Skirt	Med	2	\$16.30
0249	12/11/97	Skirt	Large	2	\$16.30
0250	12/16/97	Tunic	Small	5	\$32.82
0250	12/16/97	Tunic	Med	8	\$32.82
0250	12/16/97	Tunic	Large	9	\$32.82
0250	12/16/97	Slack	Small	5	\$17.80
0250	12/16/97	Slack	Med	8	\$17.80
0250	12/16/97	Slack	Large	8	\$17.80
0250	12/16/97	Skirt	Small	6	\$16.30
0250	12/16/97	Skirt	Med	8	\$16.30
0250	12/16/97	Skirt	Large	25	\$16.30
0251	12/18/97	Skirt	Med	10	\$16.30
0252	12/30/97	Skirt	Small	6	\$16.30
0252	12/30/97	Skirt	Large	1	\$16.30
0253	12/30/97	Tunic	Small	1	\$32.82
0253	12/30/97	Slack	Small	1	\$17.80
0253	12/30/97	Skirt	Small	2	\$16.30
0253	12/30/97	Skirt	Med	2	\$16.30
0256	01/06/98	Tunic	Small	1	\$32.82
0256	01/06/98	Tunic	Med	8	\$32.82
0256	01/06/98	Tunic	Large	4	\$32.82
0256	01/06/98	Slack	Large	2	\$17.80
0256	01/06/98	Skirt	Small	10	\$16.30
0256	01/06/98	Skirt	Med	3	\$16.30
0256	01/06/98	Skirt	Large	10	\$16.30
0257	01/13/98	Tunic	Small	2	\$32.82
0257	01/13/98	Tunic	Med	1	\$32.82
0257	01/13/98	Slack	Med	1	\$17.80
0257	01/13/98	Skirt	Med	2	\$16.30
0258	01/21/98	Tunic	Med	5	\$32.82
0258	01/21/98	Tunic	Large	7	\$32.82
0258	01/21/98	Slack	X Small	2	\$17.80
0258	01/21/98	Slack	Small	4	\$17.80
0258	01/21/98	Slack	Med	1	\$17.80
0258	01/21/98	Slack	Large	6	\$17.80
0258	01/21/98	Skirt	Med	27	\$16.30
0258	01/21/98	Skirt	Large	10	\$16.30
0259	02/06/98	Slack	Large	1	\$17.80
0259	02/06/98	Skirt	Large	9	\$16.30
0260	02/06/98	Slack	Large	6	\$17.80
0261	02/06/98	Slack	Med	6	\$17.80

0261	02/06/98	Skirt	Small	8	\$16.30
0261	02/06/98	Skirt	Med	31	\$16.30
0261	02/06/98	Skirt	Large	24	\$16.30
0262	02/06/98	Slack	Med	12	\$17.80
0262	02/06/98	Slack	Large	2	\$17.80
0262	02/06/98	Skirt	Small	3	\$16.30
0262	02/06/98	Skirt	Med	8	\$16.30
0263	02/10/98	Slack	Small	1	\$17.80
0263	02/10/98	Slack	Med	11	\$17.80
0263	02/10/98	Skirt	Small	2	\$16.30
0263	02/10/98	Skirt	Med	1	\$16.30
0264	02/13/98	Slack	Med	2	\$17.80
0264	02/13/98	Skirt	Med	2	\$16.30
0265	02/18/98	Slack	Med	1	\$17.80
0265	02/18/98	Skirt	Med	2	\$16.30
0266	02/20/98	Slack	Large	1	\$17.80
0266	02/20/98	Skirt	Large	2	\$16.30
0267	02/24/98	Slack	Small	5	\$17.80
0267	02/24/98	Slack	Med	16	\$17.80
0267	02/24/98	Skirt	Small	7	\$16.30
0268	02/27/98	Slack	X Small	20	\$17.80
0268	02/27/98	Slack	Med	15	\$17.80
0268	02/27/98	Slack	Large	5	\$17.80
0268	02/27/98	Skirt	Small	5	\$16.30
0268	02/27/98	Skirt	Med	15	\$16.30
0268	02/27/98	Skirt	Large	10	\$16.30
0269	03/03/98	Slack	Small	8	\$17.80
0269	03/03/98	Slack	Med	4	\$17.80
0269	03/03/98	Slack	Large	8	\$17.80
0269	03/03/98	Skirt	Med	14	\$16.30
0269	03/03/98	Skirt	Large	1	\$16.30
0270	03/10/98	Skirt	Small	14	\$16.30
0270	03/10/98	Skirt	Med	20	\$16.30
0270	03/10/98	Skirt	Large	15	\$16.30
0271	03/12/98	Slack	Med	2	\$17.80
0272	03/17/98	Slack	X Small	2	\$17.80
0272	03/17/98	Slack	Med	4	\$17.80
0272	03/17/98	Skirt	Large	12	\$16.30
0273	03/24/98	Slack	Small	1	\$17.80
0273	03/24/98	Slack	Med	4	\$17.80
0273	03/24/98	Slack	Large	1	\$17.80
0273	03/24/98	Skirt	Small	2	\$16.30
0273	03/24/98	Skirt	Large	2	\$16.30
0274	03/31/98	Slack	X Small	3	\$17.80
0274	03/31/98	Slack	Small	7	\$17.80
0274	03/31/98	Slack	Large	4	\$17.80

0274	03/31/98	Skirt	Small	9	\$16.30
0274	03/31/98	Skirt	Med	10	\$16.30
0274	03/31/98	Skirt	Large	4	\$16.30
0275	04/07/98	Slack	Small	3	\$17.80
0275	04/07/98	Slack	Med	4	\$17.80
0275	04/07/98	Slack	Large	6	\$17.80
0275	04/07/98	Skirt	Small	6	\$16.30
0275	04/07/98	Skirt	Med	17	\$16.30
0276	04/09/98	Slack	Large	1	\$17.80
0276	04/09/98	Skirt	X Small	13	\$16.30
0276	04/09/98	Skirt	Large	2	\$16.30
0277	04/14/98	Slack	X Small	2	\$17.80
0277	04/14/98	Slack	Small	2	\$17.80
0277	04/14/98	Slack	Med	11	\$17.80
0277	04/14/98	Slack	Large	2	\$17.80
0277	04/14/98	Skirt	Med	21	\$16.30
0277	04/14/98	Skirt	Large	10	\$16.30
0278	04/21/98	Slack	Small	1	\$17.80
0278	04/21/98	Skirt	Small	4	\$16.30
0278	04/21/98	Skirt	Med	10	\$16.30
0278	04/21/98	Skirt	Large	10	\$16.30
0279	04/23/98	Skirt	Med	2	\$16.30
0279	04/23/98	Skirt	Large	3	\$16.30
0280	05/20/98	Slack	X Small	20	\$17.80
0280	05/20/98	Slack	Small	31	\$17.80
0280	05/20/98	Slack	Med	34	\$17.80
0280	05/20/98	Slack	Large	40	\$17.80
0280	05/20/98	Skirt	X Small	18	\$16.30
0280	05/20/98	Skirt	Small	28	\$16.30
0280	05/20/98	Skirt	Med	32	\$16.30
0280	05/20/98	Skirt	Large	46	\$16.30
0281	05/05/98	Slack	Small	1	\$17.80
0281	05/05/98	Skirt	Small	2	\$16.30
0282	05/07/98	Skirt	X Small	2	\$16.30
0283	05/11/98	Slack	X Small	1	\$17.80
0283	05/11/98	Slack	Large	2	\$17.80
0283	05/11/98	Skirt	X Small	2	\$16.30
0283	05/11/98	Skirt	Small	4	\$16.30
0283	05/11/98	Skirt	Med	8	\$16.30
0285	05/19/98	Slack	X Small	2	\$17.80
0285	05/19/98	Slack	Small	6	\$17.80
0285	05/19/98	Slack	Large	4	\$17.80
0285	05/19/98	Skirt	Med	22	\$16.30
0285	05/19/98	Skirt	Large	10	\$16.30
0286	05/27/98	Slack	X Small	1	\$17.80
0286	05/27/98	Slack	Small	2	\$17.80

0286	05/27/98	Skirt	X Small	2	\$16.30
0286	05/27/98	Skirt	Small	2	\$16.30
0286	05/27/98	Skirt	Med	6	\$16.30
0286	05/27/98	Skirt	Large	2	\$16.30
0289	06/09/98	Slack	Med	2	\$17.80
0289	06/09/98	Skirt	Small	6	\$16.30
0289	06/09/98	Skirt	Med	12	\$16.30
0289	06/09/98	Skirt	Large	7	\$16.30
0290	06/11/98	Slack	Small	2	\$17.80
0290	06/11/98	Slack	Med	2	\$17.80
0290	06/11/98	Slack	Large	2	\$17.80
0290	06/11/98	Skirt	Small	1	\$16.30
0290	06/11/98	Skirt	Med	2	\$16.30
0291	06/16/98	Slack	Med	14	\$17.80
0291	06/16/98	Slack	Large	6	\$17.80
0291	06/16/98	Skirt	X Small	3	\$16.30
0292	06/18/98	Slack	Large	1	\$17.80
0293	06/23/98	Slack	Small	1	\$17.80
0293	06/23/98	Slack	Large	1	\$17.80
0293	06/23/98	Skirt	X Small	2	\$16.30
0293	06/23/98	Skirt	Small	6	\$16.30
0293	06/23/98	Skirt	Med	9	\$16.30
0293	06/23/98	Skirt	Large	2	\$16.30
0294	06/25/98	Skirt	Med	6	\$16.30
0295	06/30/98	Slack	Med	12	\$17.80
0295	06/30/98	Skirt	Med	15	\$16.30
0296	07/07/98	Slack	X Small	2	\$17.80
0296	07/07/98	Slack	Small	6	\$17.80
0296	07/07/98	Slack	Large	4	\$17.80
0296	07/07/98	Skirt	Small	5	\$16.30
0296	07/07/98	Skirt	Med	10	\$16.30
0296	07/07/98	Skirt	Large	3	\$16.30
0298	07/14/98	Slack	Med	16	\$17.80
0298	07/14/98	Skirt	Med	26	\$16.30
0298	07/14/98	Skirt	Large	22	\$16.30
0299	07/16/98	Tunic	Med	7	\$32.82
0299	07/16/98	Tunic	Large	19	\$32.82
0299	07/16/98	Skirt	Small	7	\$16.30
0299	07/16/98	Skirt	Med	6	\$16.30
0300	07/21/98	Slack	Small	5	\$17.80
0300	07/21/98	Slack	Med	10	\$17.80
0300	07/21/98	Slack	Large	10	\$17.80
0300	07/21/98	Skirt	Small	5	\$16.30
0300	07/21/98	Skirt	Med	12	\$16.30
0300	07/21/98	Skirt	Large	10	\$16.30
0302	07/28/98	Slack	Small	4	\$17.80



0302	07/28/98	Slack	Large	8	\$17.80
0302	07/28/98	Skirt	Small	9	\$16.30
0302	07/28/98	Skirt	Med	10	\$16.30
0302	07/28/98	Skirt	Large	2	\$16.30
0303	07/30/98	Slack	Small	1	\$17.80
0303	07/30/98	Skirt	Small	1	\$16.30
0301	07/23/98	Slack	Med	2	\$17.80
0301	07/23/98	Skirt	Med	2	\$16.30
0307	08/12/98	Slack	Small	1	\$17.80
0307	08/12/98	Skirt	Med	1	\$16.30
0308	08/18/98	Slack	Med	16	\$17.80
0308	08/18/98	Slack	Large	1	\$17.80
0308	08/18/98	Skirt	Med	1	\$16.30
0308	08/18/98	Skirt	Large	2	\$16.30
0311	08/19/98	Slack	Med	2	\$17.80
0311	08/19/98	Skirt	Med	2	\$16.30
0312	08/27/98	Slack	Small	6	\$17.80
0312	08/27/98	Slack	Med	1	\$17.80
0312	08/27/98	Slack	Large	4	\$17.80
0312	08/27/98	Skirt	Small	21	\$16.30
0312	08/27/98	Skirt	Med	21	\$16.30
0312	08/27/98	Skirt	Large	5	\$16.30
0313	09/02/98	Skirt	Small	8	\$16.30
0313	09/02/98	Skirt	Med	51	\$16.30
0313	09/02/98	Skirt	Large	21	\$16.30
0314	09/03/98	Slack	Large	1	\$17.80
0315	09/09/98	Slack	Small	4	\$17.80
0315	09/09/98	Skirt	X Small	10	\$16.30
0315	09/09/98	Skirt	Small	5	\$16.30
0315	09/09/98	Skirt	Med	10	\$16.30
0315	09/09/98	Skirt	Large	12	\$16.30
0317	09/18/98	Skirt	Large	10	\$16.30
0316	09/15/98	Slack	Med	10	\$17.80
0316	09/15/98	Skirt	Med	6	\$16.30
0316	09/15/98	Skirt	Large	5	\$16.30
0318	09/22/98	Slack	Small	4	\$17.80
0320	09/28/98	Slack	Small	1	\$17.80
0320	09/28/98	Skirt	Small	2	\$16.30
0321	09/30/98	Slack	X Small	2	\$17.80
0321	09/30/98	Slack	Small	6	\$17.80
0321	09/30/98	Slack	Med	40	\$17.80
0321	09/30/98	Slack	Large	37	\$17.80
0321	09/30/98	Slack	X Large	1	\$17.80
0322	10/09/98	Tunic	Small	1	\$32.82
0322	10/09/98	Skirt	Small	8	\$16.30
0322	10/09/98	Skirt	Med	8	\$16.30

0322	10/09/98	Skirt	Large	6	\$16.30
0323	10/08/98	Skirt	Med	1	\$16.30

## Appendix B

The following pages document the Standard Allowed Minutes (SAMS) used as a basis for evaluation of productivity in section 3.5 Sew, Finish and Inspect. The reports are from the TimeQuest for Apparel Manufacturing software program developed and distributed by:

Industrial Engineering Services, InTime Inc.  
2400 East Rock Creek Road  
New Bern, North Carolina 28562  
Telephone: 252-637-2471

The TimeQuest for Apparel Manufacturing software outputs labor standards based on a database of pre-defined motions with assigned times for handling parts, aligning parts to needle, sewing, etc. The pre-defined motions are built using MODAPTS, Modular Arrangement of Pre-determined Time Standards, loaded within TimeQuest. To create labor standards TimeQuest combines a garment's specifications, such as seam length, with the pre-defined motion blocks.

Dependent on a plant's needs, TimeQuest outputs a variety of reports. For the Marine Maternity Dress Uniform – Tunic, Skirt and Slack the below reports are presented, respectively:

1. Part Workcenter Summary Report – Prints a summary of the operators' total time spent producing a garment. It incorporates a plant's Physical, Fatigue and Delay factor(s) (PF&D) and pay rate(s).

For the Marine Maternity Dress Uniform the following PF&D factors are used:

<u>Sewing Operations</u> (Performed by Operators 1 – 6)	22%
- 10% for bobbin change and machine delays	
- 12% for fatigue breaks, Cal Poly Demo gives two – 20 minute breaks per 8 hour day	
<u>Finishing Operations</u> (Performed by Operators 7 – 9)	12%

In-addition, a 10% incentive allowance is applied due to the low volume work assignment. And, a pay rate of \$6.50 per hour is used.

2. Part Operation Summary Report – Prints a summary of each operation performed by a workcell's or production team's operators.
3. Part Variables Report – Prints a list of set parameters for a garment, such as stitches per inch.
4. Part Routing Report – Prints a list of all the operations performed for a garment, independent of operators, and breaks down each operation's labor standard by Setup, Handle and Process time, as defined below:

- Setup Time: The time for the sewing machine and station to be prepared for production of a garment. (Note: For the Marine Maternity Dress Uniform, the Cal Poly Demo to date has not performed any set-up time studies.)
- Handle Time: The time for obtaining and staging cut parts and sub-assemblies at a work station.
- Process Time: The time spent processing a part or sub-assembly at a workstation. Stated another way, this is the time spent “adding value” to a garment.

Note: Each of the times defined above are calculated per garment.

5. Operator Reports – Prints the break down of the motion blocks used to create a labor standard for each operation. The report may be printed for multiple levels of detail. For the MMDU garments, the Operator Report is printed at level three.

# Part Routing Report

Company ATRC APPAREL TECH & RESEARCH CENTER

Plant CAL POLY POMONA CAL POLY POMONA

Part MMDU-TUNIC MATERNITY DRESS UNIFORM (TUNIC)

Operation	Setup	Handle	Process	Normal	PF&D	Incentive	Standard	Cost
INSPECT, TRIM, FOLD, BAG, TUNIC	0.000	.032	.131	.385	22.0 %	10.0 %	.508	\$0.06
IRON TO FUSE FACING PIECES, MATERNITY TUNIC	0.000	0.000	.948	1.790	22.0 %	10.0 %	2.363	\$0.26
PRESS, MATERNITY TUNIC	0.000	.075	.409	.484	22.0 %	10.0 %	.639	\$0.07
IRON (PRESS)SHOULDER SEAMS OF FACING, MATE	0.000	.224	.409	.633	22.0 %	10.0 %	.835	\$0.09
OVERLOCK CLEAN 2 BACK PIECES, MATERNITY TUNIC	0.000	.075	.682	.758	22.0 %	10.0 %	1.000	\$0.11
OVERLOCK CLEAN FACING, WOMEN'S MATERNITY	0.000	.075	.467	.758	22.0 %	10.0 %	1.000	\$0.11
OVERLOCK CLEAN BOTTOM OF POCKET	0.000	0.000	.377	.377	22.0 %	10.0 %	.497	\$0.05
OVERLOCK CLEAN SIDES, MATERNITY TUNIC	0.000	.043	1.318	1.361	22.0 %	10.0 %	1.796	\$0.19
BLIND HEM, MATERNITY TUNIC	0.000	.086	1.091	1.177	22.0 %	10.0 %	1.554	\$0.17
JOIN BACK PIECES, MATERNITY TUNIC	0.000	.032	.322	.355	22.0 %	10.0 %	.468	\$0.05
SAFETYSTITCH JOIN 3 PIECE FRONT, MATERNITY TUNIC	0.000	.043	.839	.882	22.0 %	10.0 %	1.164	\$0.13
SAFETYSTITCH JOIN FRONT FACING, MATERNITY TUNIC	0.000	.062	.792	.854	22.0 %	10.0 %	1.128	\$0.12
LOCKSTITCH JOIN SHOULDER OF FACINGS, MATERNITY TUNIC	0.000	.062	.437	.500	22.0 %	10.0 %	.659	\$0.07
OVERLOCK JOIN 2 SIDES OF TOP OF 3 PIECE FRONT	0.000	.032	1.080	1.113	22.0 %	10.0 %	1.469	\$0.16
MAKE POCKET SAFETYSTITCH, MATERNITY TUNIC	0.000	.049	.448	.497	22.0 %	10.0 %	.656	\$0.07
TACK ARMHOLE, MATERNITY TUNIC	0.000	.043	.522	.565	22.0 %	10.0 %	.746	\$0.08
SGL NDL TOPSTITCH JOIN SEAM OF 3 PIECE FRONT	0.000	0.000	.695	.695	22.0 %	10.0 %	.917	\$0.10
IRON TO PRESS OPEN SHOULDER	0.000	.086	1.258	1.344	22.0 %	10.0 %	1.774	\$0.19
JOIN FACING TO BODY AT ARMHOLE, MATERNITY TUNIC	0.000	.142	2.825	2.967	22.0 %	10.0 %	3.916	\$0.42
JOIN BIAS TO BOTTOM, MDU TUNIC	0.000	.830	.926	1.756	22.0 %	10.0 %	2.318	\$0.25
JOIN & TOPSTITCH FACING TO BODY AT NECKLINE,	0.000	0.000	1.644	3.136	22.0 %	10.0 %	4.139	\$0.45
JOIN SIDESEAM, MATERNITY TUNIC	0.000	0.000	1.275	1.275	22.0 %	10.0 %	1.683	\$0.18
JOIN SHOULDER, MATERNITY TUNIC	0.000	0.000	.523	.523	22.0 %	10.0 %	.690	\$0.07
SET LABEL, MATERNITY TUNIC	0.000	0.000	.211	.211	22.0 %	10.0 %	.279	\$0.03

Company ATRC APPAREL TECH &amp; RESEARCH CENTER

Plant CAL POLY POMONA CAL POLY POMONA

Part MMDU-TUNIC MATERNITY DRESS UNIFORM (TUNIC)

Operation	Setup	Handle	Process	Normal	PF&D	Incentive	Standard	Cost
SET POCKET, MATERNITY TUNIC	0.000	0.000	1.801	1.801	22.0 %	10.0 %	2.378	\$0.26
SET ZIPPER, MATERNITY TUNIC	0.000	0.000	1.135	1.135	22.0 %	10.0 %	1.498	\$0.16
SGL NDL JOIN 2 SIDES OF TOP OF 3 PIECE FRONT	0.000	.043	.786	.829	22.0 %	10.0 %	1.094	\$0.12
BAR TACK POCKET, MATERNITY TUNIC	0.000	.065	.595	.659	22.0 %	10.0 %	.870	\$0.09
SGL NDL TOPSTITCH 8" BOX, MATERNITY TUNIC	0.000	0.000	1.226	1.226	22.0 %	10.0 %	1.619	\$0.18
TOPSTITCH ZIPPER, MATERNITY TUNIC	0.000	0.000	1.050	1.050	22.0 %	10.0 %	1.387	\$0.15
TOPSTITCH TOP OF ZIPPER, MATERNITY TUNIC	0.000	0.000	.755	.755	22.0 %	10.0 %	.996	\$0.11
	0.000	2.101	26.978	31.849			42.041	\$4.55

Parts Per Minute

Parts Per 8 Hour Day

.024

11.417

# Part Workcenter Summary Report

Thursday, September 09, 1999 @ 4:29 PM

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Company **ATRC** APPAREL TECH & RESEARCH CENTER  
 Plant **CAL POLY POMONA** CAL POLY POMONA  
 Part: **MMDU-TUNIC** MATERNITY DRESS UNIFORM (TUNIC)

Workcenter	Normal Minutes	PF & D	Incentive	Std. Minutes	Cost
<b>Material Group FLORAL OR OTHER PATTERN</b>					<b>\$4.55</b>
Busy Bees #1	13.182	22.0 %	10.0 %	17.401	\$1.89
Busy Bees #2	18.667	22.0 %	10.0 %	24.640	\$2.67
Total Minutes	31.849			42.041	<b>\$4.55</b>
Total Hours	.531			.701	
<b>Material Group MARINE CORP KHAKI POLY/WOOL BLEND</b>					<b>\$4.55</b>
Busy Bees #1	13.182	22.0 %	10.0 %	17.401	\$1.89
Busy Bees #2	18.667	22.0 %	10.0 %	24.640	\$2.67
Total Minutes	31.849			42.041	<b>\$4.55</b>
Total Hours	.531			.701	
<b>Material Group SOLID FABRIC, NO ALIGNMENT</b>					<b>\$4.55</b>
Busy Bees #1	13.182	22.0 %	10.0 %	17.401	\$1.89
Busy Bees #2	18.667	22.0 %	10.0 %	24.640	\$2.67
Total Minutes	31.849			42.041	<b>\$4.55</b>
Total Hours	.531			.701	

# Part Operation Summary Report

Page 1

Company **ATRC** APPAREL TECH & RESEARCH CENTER

Plant **CAL POLY POMONA** CAL POLY POMONA

Part **MMDU-TUNIC** MATERNITY DRESS UNIFORM (TUNIC)

Workcenter/Operation	Normal Minutes	Std. Minutes	Cost
<b>Material Group FLORAL OR OTHER PATTERN</b>			<b>\$4.55</b>
<b>Busy Bees #1</b>	<b>PF&amp;D 22.0% Incentive 10.0%</b>		
INSPECT, TRIM, FOLD, BAG, TUNIC	.385	.508	\$0.06
IRON TO FUSE FACING PIECES, MATERNITY TUNIC	1.790	2.363	\$0.26
PRESS, MATERNITY TUNIC	.484	.639	\$0.07
IRON (PRESS) SHOULDER SEAMS OF FACING, MATERNITY TUNIC	.633	.835	\$0.09
OVERLOCK CLEAN 2 BACK PIECES, MATERNITY TUNIC	.758	1.000	\$0.11
OVERLOCK CLEAN FACING, WOMEN'S MATERNITY TUNIC	.758	1.000	\$0.11
OVERLOCK CLEAN BOTTOM OF POCKET	.377	.497	\$0.05
OVERLOCK CLEAN SIDES, MATERNITY TUNIC	1.361	1.796	\$0.19
BLIND HEM, MATERNITY TUNIC	1.177	1.554	\$0.17
JOIN BACK PIECES, MATERNITY TUNIC	.355	.468	\$0.05
SAFETYSTITCH JOIN 3 PIECE FRONT, MATERNITY TUNIC	.882	1.164	\$0.13
SAFETYSTITCH JOIN FRONT FACING, MATERNITY TUNIC	.854	1.128	\$0.12
LOCKSTITCH JOIN SHOULDER OF FACINGS, MATERNITY TUNIC	.500	.659	\$0.07
OVERLOCK JOIN 2 SIDES OF TOP OF 3 PIECE FRONT	1.113	1.469	\$0.16
MAKE POCKET SAFETYSTITCH, MATERNITY TUNIC	.497	.656	\$0.07
TACK ARMHOLE, MATERNITY TUNIC	.565	.746	\$0.08
SGL NDL TOPSTITCH JOIN SEAM OF 3 PIECE FRONT	.695	.917	\$0.10
<b>Busy Bees #2</b>	<b>PF&amp;D 22.0% Incentive 10.0%</b>		
IRON TO PRESS OPEN SHOULDER	1.344	1.774	\$0.19
JOIN FACING TO BODY AT ARMHOLE, MATERNITY TUNIC	2.967	3.916	\$0.42
JOIN BIAS TO BOTTOM, MDU TUNIC	1.756	2.318	\$0.25
JOIN & TOPSTITCH FACING TO BODY AT NECKLINE, MATERNITY T	3.136	4.139	\$0.45
JOIN SIDESEAM, MATERNITY TUNIC	1.275	1.683	\$0.18
JOIN SHOULDER, MATERNITY TUNIC	.523	.690	\$0.07
SET LABEL, MATERNITY TUNIC	.211	.279	\$0.03
SET POCKET, MATERNITY TUNIC	1.801	2.378	\$0.26
SET ZIPPER, MATERNITY TUNIC	1.135	1.498	\$0.16
SGL NDL JOIN 2 SIDES OF TOP OF 3 PIECE FRONT	.829	1.094	\$0.12
BAR TACK POCKET, MATERNITY TUNIC	.659	.870	\$0.09
SGL NDL TOPSTITCH 8" BOX, MATERNITY TUNIC	1.226	1.619	\$0.18
TOPSTITCH ZIPPER, MATERNITY TUNIC	1.050	1.387	\$0.15
TOPSTITCH TOP OF ZIPPER, MATERNITY TUNIC	.755	.996	\$0.11
<b>Total Minutes</b>	<b>31.849</b>	<b>42.041</b>	<b>\$4.55</b>
<b>Total Hours</b>	<b>.531</b>	<b>.701</b>	

**Material Group MARINE CORP KHAKI POLY/WOOL BLEND \$4.55**
**Busy Bees #1** **PF&D 22.0% Incentive 10.0%**

INSPECT, TRIM, FOLD, BAG, TUNIC	.385	.508	\$0.06
IRON TO FUSE FACING PIECES, MATERNITY TUNIC	1.790	2.363	\$0.26



Company **ATRC** APPAREL TECH & RESEARCH CENTER  
 Plant **CAL POLY POMONA** CAL POLY POMONA  
 Part **MMDU-TUNIC** MATERNITY DRESS UNIFORM (TUNIC)

Workcenter/Operation	Normal Minutes	Std. Minutes	Cost
<b>Material Group MARINE CORP KHAKI POLY/WOOL BLEND</b>			
<b>Busy Bees #1 PF&amp;D 22.0% Incentive 10.0%</b>			
PRESS, MATERNITY TUNIC	.484	.639	\$0.07
IRON (PRESS)SHOULDER SEAMS OF FACING, MATERNITY TUNIC	.633	.835	\$0.09
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JOIN BACK PIECES, MATERNITY TUNIC	.355	.468	\$0.05
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SAFETYSTITCH JOIN FRONT FACING, MATERNITY TUNIC	.854	1.128	\$0.12
LOCKSTITCH JOIN SHOULDER OF FACINGS, MATERNITY TUNIC	.500	.659	\$0.07
OVERLOCK JOIN 2 SIDES OF TOP OF 3 PIECE FRONT	1.113	1.469	\$0.16
MAKE POCKET SAFETYSTITCH, MATERNITY TUNIC	.497	.656	\$0.07
TACK ARMHOLE, MATERNITY TUNIC	.565	.746	\$0.08
SGL NDL TOPSTITCH JOIN SEAM OF 3 PIECE FRONT	.695	.917	\$0.10
<b>Busy Bees #2 PF&amp;D 22.0% Incentive 10.0%</b>			
IRON TO PRESS OPEN SHOULDER	1.344	1.774	\$0.19
JOIN FACING TO BODY AT ARMHOLE, MATERNITY TUNIC	2.967	3.916	\$0.42
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JOIN & TOPSTITCH FACING TO BODY AT NECKLINE, MATERNITY 1	3.136	4.139	\$0.45
JOIN SIDESEAM, MATERNITY TUNIC	1.275	1.683	\$0.18
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Total Minutes	31.849	42.041	<b>\$4.55</b>
Total Hours	.531	.701	

**Material Group SOLID FABRIC, NO ALIGNMENT \$4.55**

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INSPECT, TRIM, FOLD, BAG, TUNIC	.385	.508	\$0.06
IRON TO FUSE FACING PIECES, MATERNITY TUNIC	1.790	2.363	\$0.26
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OVERLOCK CLEAN FACING, WOMEN'S MATERNITY TUNIC	.758	1.000	\$0.11
OVERLOCK CLEAN BOTTOM OF POCKET	.377	.497	\$0.05

Company **ATRC** APPAREL TECH & RESEARCH CENTER  
 Plant **CAL POLY POMONA** CAL POLY POMONA  
 Part **MMDU-TUNIC** MATERNITY DRESS UNIFORM (TUNIC)

Workcenter/Operation	Normal Minutes	Std. Minutes	Cost
<b>Material Group SOLID FABRIC, NO ALIGNMENT</b>			
<b>Busy Bees #1 PF&amp;D 22.0% Incentive 10.0%</b>			
OVERLOCK CLEAN SIDES, MATERNITY TUNIC	1.361	1.796	\$0.19
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SGL NDL TOPSTITCH JOIN SEAM OF 3 PIECE FRONT	.695	.917	\$0.10
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Total Minutes	31.849	42.041	
Total Hours	.531	.701	<b>\$4.55</b>

# Operator Report

Company ATRC APPAREL TECH & RESEARCH CENTER  
 Plant CAL POLY POMONACAL POLY POMONA  
 Part MMDU-TUNIC MATERNITY DRESS UNIFORM (TUNIC)  
 Component MMDU-TUNIC MATERNITY DRESS UNIFORM (TUNIC)

Value	Standard Minutes	Standard Hours
	0.000	0.000

Code	Description	Time	Freq.	Occur.	Ext. Time
FATO-WT-FUSEFAC	IRON TO FUSE FACING PIECES, MATERNITY TUNIC	1.79035	1.00	1.00	1.79035
FATS-WT-FSFRCNT	FUSE FRONT CENTER FACING, MATERNITY TUNIC	0.25500	1.00	1.00	0.25500
W5	STEP TO TABLE	0.01075	1.00	1.00	0.01075
M2G3 M3P0	RH OBTAIN FACING	0.01720	1.00	1.00	0.01720
M2G3 M4P0	LH OBTAIN APPROPRIATE PELLON LINER	0.01935	1.00	1.00	0.01935
W5	STEP TO IRONING BOARD	0.01075	1.00	1.00	0.01075
SUVE-APT-SM	LAY PELLON LINER FLAT TO IRONING BOARD	0.01075	1.00	1.00	0.01075
M3G1	LH GRASP FACING	0.00860	1.00	1.00	0.00860
SUVE-APP-FS	ALIGN FACING TO PELLON LINER	0.02580	1.00	1.00	0.02580
M4P0	SMOOTH FACING OVER LINER	0.00860	1.00	1.00	0.00860
M4G1 M4P2	OBTAIN IRON AND POSITION TO FACING	0.02365	1.00	1.00	0.02365
465 MODS	TIME TO IRON/FUSE FACING	1.00000	0.08	1.00	0.08300
M4P2	ASIDE IRON	0.01290	1.00	1.00	0.01290
M4G1 M4P2	REGRASP AND ASIDE FACING TO LEFT OUT OF WAY	0.02365	1.00	1.00	0.02365
FATS-WT-FSFRARM	FUSE FRONT ARMHOLE FACING, MATERNITY TUNIC	0.58775	1.00	1.00	0.58775
W5	STEP TO TABLE	0.01075	1.00	1.00	0.01075
M2G3 M3P0	RH OBTAIN RH FACING	0.01720	1.00	1.00	0.01720
M2G3 M3P0	LH OBTAIN LH FACING	0.01720	1.00	1.00	0.01720
J2	JUGGLE TO SHAKE FACING APART FROM STACK	0.00430	2.00	1.00	0.00860
W5	STEP TO IRONING BOARD	0.01075	1.00	1.00	0.01075
M3P0	LAY PARTS TO IRONING BOARD	0.00645	1.00	1.00	0.00645

## Company ATRC APPAREL TECH &amp; RESEARCH CENTER

Plant CAL POLY POMONACAL POLY POMONA

Part MMDU-TUNIC MATERNITY DRESS UNIFORM (TUNIC)

Component MMDU-TUNIC MATERNITY DRESS UNIFORM (TUNIC)

W5	STEP BACK TO TABLE	1.00	1.00	0.01075
M2G3 M3P0	RH OBTAIN APPROPRIATE RH PELLON LINER	1.00	1.00	0.01720
M2G3 M4P0	LH OBTAIN APPROPRIATE LH PELLON LINER	1.00	1.00	0.01935
J2	JUGGLE TO SHAKE LINERS APART FROM STACK	2.00	1.00	0.00860
W5	STEP TO IRONING BOARD	1.00	1.00	0.01075
M3P0	ASIDE LH PELLON LINER	1.00	1.00	0.00645
M4G1	REGRASP RH PELLON LINER	2.00	1.00	0.02150
SUVE-APT-SM	LAY RH PELLON LINER FLAT TO IRONING BOARD	2.00	1.00	0.02150
M4G3	BH GRASP RH FACING	2.00	1.00	0.03010
SUVE-APP-FM	ALIGN FACING TO PELLON LINER	2.00	1.00	0.05590
M4P0	SMOOTH FACING OVER LINER	2.00	1.00	0.01720
M4G1 M4P2	OBTAIN IRON AND POSITION TO FACING	2.00	1.00	0.04730
465 MODS	TIME TO IRON/FUSE FACING (.05 MINUTES EACH)	0.10	1.00	0.10000
M4P2	ASIDE IRON	2.00	1.00	0.02580
M2G3 M3P0	GRASP LH FACING/LINER FROM IRONING BOARD	1.00	1.00	0.01720
SUVE-APP-SM	ALIGN LH FACING FACE-TO-FACE TO RH FACING	1.00	1.00	0.02150
M4G1 M4P2	GRASP IRON; PSN TO FACINGS	1.00	1.00	0.02365
465 MODS	TIME TO IRON FACINGS STACKED TOGETHER	0.03	1.00	0.02550
M4P2	ASIDE IRON	1.00	1.00	0.01290
M4G1 M4P2	REGRASP AND ASIDE FACING TO LEFT OUT OF WAY	1.00	1.00	0.02365
FATS-WT-FSBKARM	FUSE BACK ARMHOLE FACING, MATERNITY TUNIC	1.00	1.00	0.94760
W5	STEP TO TABLE	3.00	1.00	0.03225
465 MODS	TIME TO SORT FACINGS/LINERS	0.21	1.00	0.21000
M2G3 M3P0	RH OBTAIN RH FACING	1.00	1.00	0.01720
M2G3 M3P0	LH OBTAIN LH FACING	1.00	1.00	0.01720
J2	JUGGLE TO SHAKE FACING APART FROM STACK	2.00	1.00	0.00860
W5	STEP TO IRONING BOARD	3.00	1.00	0.03225
M3P0	LAY PARTS TO IRONING BOARD	1.00	1.00	0.00645
W5	STEP BACK TO TABLE	2.00	1.00	0.02150
M2G3 M3P0	RH OBTAIN APPROPRIATE RH PELLON LINER	1.00	1.00	0.01720

Company ATRC APPAREL TECH &amp; RESEARCH CENTER

Plant CAL POLY POMONA CAL POLY POMONA

Part MMDU-TUNIC MATERNITY DRESS UNIFORM (TUNIC)

Component MMDU-TUNIC MATERNITY DRESS UNIFORM (TUNIC)

M2G3 M4P0	LH OBTAIN APPROPRIATE LH PELLON LINER	0.01935	1.00	0.01935
J2	JUGGLE TO SHAKE LINERS APART FROM STACK	0.00430	1.00	0.00860
W5	STEP TO IRONING BOARD	0.01075	1.00	0.01075
M3P0	ASIDE LH PELLON LINER	0.00645	1.00	0.00645
M4G1	REGRASP RH PELLON LINER	0.01075	1.00	0.02150
SUVE-APT-SM	LAY RH PELLON LINER FLAT TO IRONING BOARD	0.01075	1.00	0.02150
M4G3	BH GRASP RH FACING	0.01505	1.00	0.03010
SUVE-APP-FM	ALIGN FACING TO PELLON LINER	0.02795	1.00	0.05590
M4P0	SMOOTH FACING OVER LINER	0.00860	1.00	0.01720
M4G1 M4P2	OBTAIN IRON AND POSITION TO FACING	0.02365	1.00	0.04730
465 MODS	TIME TO IRON/FUSE FACING (.09 MINUTES EACH)	1.00000	1.00	0.18000
M4P2	ASIDE IRON	0.01290	1.00	0.02580
M2G3 M3P0	GRASP LH FACING/LINER FROM IRONING BOARD	0.01720	1.00	0.01720
SUVE-APP-SM	ALIGN LH FACING FACE-TO-FACE TO RH FACING	0.02150	1.00	0.02150
M4G1 M4P2	GRASP IRON; PSN TO FACINGS	0.02365	1.00	0.02365
465 MODS	TIME TO IRON FACINGS STACKED TOGETHER	1.00000	1.00	0.03300
M4P2	ASIDE IRON	0.01290	1.00	0.01290
M4G1 M4P2	REGRASP AND ASIDE FACING TO LEFT ONTO STACK	0.02365	1.00	0.02365
J2	REGRASP STACK	0.00430	1.00	0.00860
SATO-WT-JNFRFTFC	SAFETYSTITCH JOIN FRONT FACING, MATERNITY TUNIC	0.85447	1.00	0.85447
BATS-WT-JNFRFTFC	HANDLING, JOIN FRONT FACING, MATERNITY TUNIC	0.06235	1.00	0.06235
W5	STEP FROM IRONING BOARD TO SAFETYSTITCH	0.01075	1.00	0.05375
M4P0	ASIDE PARTS TO TABLE TOP	0.00860	1.00	0.00860
SATS-WT-JNFRFTFC	JOIN FRONT FACING, MATERNITY TUNIC	0.79212	1.00	0.79212
M2G1 M4P0	REGRASP FRONT FACING AND LAY TO TABLETOP	0.01505	1.00	0.01505
SUVE-OOT-NM	OBTAIN LH FRONT ARMHOLE FACING FROM STACK AT	0.03440	1.00	0.06880
SUVE-APP-FM	ALIGN LH FRONT ARMHOLE FACING TO FRONT	0.02795	1.00	0.05590
SUVE-APN-SM	ALIGN ASSEMBLY TO PRESSER FOOT	0.01505	1.00	0.03010
F2	PEDAL TO START MACHINE	0.00430	1.00	0.00860
SUVF-SS-1N	Sew 1" WILCOX/GIBBS SAFETYSTITCH, 2000 RPM,	0.01095	1.00	0.02190

## Company ATRC APPAREL TECH &amp; RESEARCH CENTER

Plant CAL POLY POMONACAL POLY POMONA

Part MMDU-TUNIC MATERNITY DRESS UNIFORM (TUNIC)

Component MMDU-TUNIC MATERNITY DRESS UNIFORM (TUNIC)

SUVE-RHP-AS	REGRASP TOP PLY (5X)	0.01720	10.00	1.00	0.17200
SUVE-APP-SS	MINOR ALIGN TOP PLY TO BOTTOM (3X)	0.01935	6.00	1.00	0.11610
F2	PEDAL TO START SEW (5X)	0.00430	10.00	1.00	0.04300
SUVF-SS-2N	Sew 2",WILCOX/GIBBS SAFETYSTITCH, 2000 RPM,	0.01545	10.00	1.00	0.15452
SUVE-RHP-AS	REGRASP END OF PARTS TO MOVE FINGERS OUT OF	0.01720	2.00	1.00	0.03440
F2	PEDAL TO START SEW	0.00430	2.00	1.00	0.00860
SUVF-SS-2N	Sew 2",WILCOX/GIBBS SAFETYSTITCH, 2000 RPM,	0.01545	2.00	1.00	0.03090
SUVE-CTS-AA	CUT THREAD WITH PALMED SNIPS	0.01290	2.00	1.00	0.02580
M3P0	ROTATE FRONT PART 180 DEGREES	0.00645	1.00	1.00	0.00645
0 MOD	REPEAT ABOVE STEPS TO ATTACH LH ARMHOLE	0.00000	1.00	1.00	0.00000
SATO-WT-CLNFAC	OVERLOCK CLEAN FACING, WOMEN'S MATERNITY TUNIC	0.75760	1.00	1.00	0.75760
BATS-WT-CLNFRFC	HANDLING-CLEAN FRONT FACING, MATERNITY TUNIC	0.07525	1.00	1.00	0.07525
SUVE-OTO-NM	OBTAIN BACK ARMHOLE FACING FROM TABLETOP	0.03440	1.00	1.00	0.03440
W5	STEP TO M/C#3, OVERLOCK	0.01075	3.00	1.00	0.03225
SUVE-DPO-NM	ASIDE BACK ARMHOLE FACING TO M/C#3 TABLETOP	0.00860	1.00	1.00	0.00860
SATS-WT-CLNFRFC	CLEAN 26" FRONT FACING, WOMEN'S MATERNITY TUNIC	0.21489	1.00	1.00	0.21489
SUVE-RHP-AM	LH REGRASP ASSEMBLED FRONT FACING	0.01935	1.00	1.00	0.01935
SUVE-APN-SM	ALIGN END OF FRONT FACING TO PRESSER FOOT	0.01505	1.00	1.00	0.01505
F2	PEDAL TO START MACHINE	0.00430	1.00	1.00	0.00430
SUVF-OL-6N	Sew 6",US39500 OVERLOCK, 4550 RPM, NORMAL stop	0.01832	1.00	1.00	0.01832
SUVE-FPS-SS	FOLD LH SEAM OVER FLAT	0.01935	1.00	1.00	0.01935
F2	PEDAL TO START MACHINE	0.00430	2.00	1.00	0.00860
SUVF-OL-6N	Sew 6",US39500 OVERLOCK, 4550 RPM, NORMAL stop	0.01832	2.00	1.00	0.03664
SUVE-FPS-SS	FOLD RH SEAM OVER FLAT	0.01935	1.00	1.00	0.01935
F2	PEDAL TO START MACHINE	0.00430	1.00	1.00	0.00430
SUVF-OL-6N	Sew 6",US39500 OVERLOCK, 4550 RPM, NORMAL stop	0.01832	1.00	1.00	0.01832
J2	REPOSITION FINGERS ON END OF SEW OUT OF WAY	0.00430	1.00	1.00	0.00430
F2	PEDAL TO START MACHINE	0.00430	1.00	1.00	0.00430
SUVF-OL-3N	Sew 3",US39500 OVERLOCK, 3250 RPM, NORMAL stop	0.01476	1.00	1.00	0.01476
M3P0	PULL FACING AWAY FROM NEEDLE	0.00645	1.00	1.00	0.00645

Company ATRC APPAREL TECH &amp; RESEARCH CENTER

Plant CAL POLY POMONACAL POLY POMONA

Part MMDU-TUNIC MATERNITY DRESS UNIFORM (TUNIC)

Component MMDU-TUNIC MATERNITY DRESS UNIFORM (TUNIC)

SUVE-CTS-AA	CUT THREAD WITH PALMED SNIPS	0.01290	1.00	1.00	0.01290
SUVE-DPO-NM	ASIDE FACING TO LHS M/C TABLE	0.00860	1.00	1.00	0.00860
SATS-WT-CLNBKFC	CLEAN BACK ARMHOLE FACINGS, WOMEN'S MATERNITY	0.46746	1.00	1.00	0.46746
M4G3 M4P0	GRASP ARMHOLE FACINGS AND BRING STACK	0.02365	1.00	1.00	0.02365
SUVE-OOO-NM	LH OBTAIN 1 FACING	0.02365	2.00	1.00	0.04730
SUVE-APN-SM	ALIGN END OF FACING TO PRESSER FOOT	0.01505	2.00	1.00	0.03010
F2	PEDAL TO START MACHINE	0.00430	2.00	1.00	0.00860
SUVF-OL-RED16N	Sew 16" REDUCED SPD ,US39500 OVERLOCK, 1950	0.08030	2.00	1.00	0.16060
M3P0	PULL CORNER OF FACING AROUND PRESSER FOOT	0.00645	2.00	1.00	0.01290
SUVE-CTS-AA	CUT THREAD WITH PALMED SNIPS	0.01290	2.00	1.00	0.02580
SUVE-APN-SM	ALIGN END OF FACING UNDER PRESSER FOOT	0.01505	2.00	1.00	0.03010
F2	PEDAL DROP PRESSER FOOT	0.00430	2.00	1.00	0.00860
SUVF-OL-3N	Sew 3",US39500 OVERLOCK, 3250 RPM, NORMAL stop	0.01476	2.00	1.00	0.02952
M3P0	PULL FACING AWAY FROM NEEDLE	0.00645	2.00	1.00	0.01290
SUVE-CTS-AA	CUT THREAD WITH PALMED SNIPS	0.01290	2.00	1.00	0.02580
SUVE-CTS-AA	CUT 2ND THREAD WITH PALMED SNIPS	0.01290	2.00	1.00	0.02580
SUVE-DPO-SM	ASIDE FACING TO LH M/C	0.01290	2.00	1.00	0.02580
0 MOD	REPEAT STEPS ABOVE TO CLEAN 2ND BACK	0.00000	1.00	1.00	0.00000
SATO-WT-CLPKT	OVERLOCK CLEAN BOTTOM OF POCKET	0.37650	1.00	1.00	0.37650
SATS-WT-CLPKT	OVERLOCK CLEAN POCKET, MATERNITY TUNIC	0.37650	1.00	1.00	0.37650
SATM-WT-CLPKT1	OVERLOCK CLEAN BOTTOM OF 1 POCKET,	0.18825	2.00	1.00	0.37650
SATO-WT-JNSHFC	LOCKSTITCH JOIN SHOULDER OF FACINGS, MATERNITY	0.49956	1.00	1.00	0.49956
BATS-WT-JNSHFC	JOIN SHOULDER OF FACINGS	0.06235	1.00	1.00	0.06235
M2G3	GRASP FACINGS FROM M/C#2 TABLETOP	0.01075	1.00	1.00	0.01075
W5	STEP TO S/N M/C #4	0.01075	4.00	1.00	0.04300
M4P0	ASIDE BACK ARMHOLE FACINGS TO TABLETOP	0.00860	1.00	1.00	0.00860
SATS-WT-JNSHFC	JOIN SHOULDER OF FACINGS	0.43721	1.00	1.00	0.43721
SUVE-APN-SM	ALIGN FRONT FACING UNDER PRESSER FOOT	0.01505	2.00	1.00	0.03010
F2	DROP PRESSER FOOT TO HOLD FACING	0.00430	2.00	1.00	0.00860
SUVE-OOT-NM	GRASP LH BACK ARMHOLE FACING FROM TABLETOP	0.03440	2.00	1.00	0.06880

Company ATRC APPAREL TECH & RESEARCH CENTER

Plant CAL POLY POMONACAL POLY POMONA

Part MMDU-TUNIC MATERNITY DRESS UNIFORM (TUNIC)

Component MMDU-TUNIC MATERNITY DRESS UNIFORM (TUNIC)

F2	PEDAL LIFT PRESSER FOOT	0.00430	2.00	1.00	0.00860
M2P0	PULL FRONT FACING BACK FROM PRESSER FOOT	0.00430	2.00	1.00	0.00860
SUVE-APP-FS	ALIGN LH BACK ARMHOLE FACING TO FRONT FACING	0.02580	2.00	1.00	0.05160
SUVE-APN-SS	ALIGN LEFT SHOULDER ASSY UNDER NEEDLE	0.01290	2.00	1.00	0.02580
F2	PEDAL DROP PRESSER FOOT	0.00430	2.00	1.00	0.00860
SUVE-RHP-AS	REGRASP OPPOSITE END OF SHOULDER ASSY	0.01720	2.00	1.00	0.03440
SUVE-APP-SS	ALIGN OPPOSITE END OF SHOULDER ASSY	0.01935	2.00	1.00	0.03870
SUVE-SBB-AA	SEW BACKTACK, BUTTON	0.01505	2.00	1.00	0.03010
SUVF-LSS-4N	Sew 4", Singer 591 Ndl Lockstitch, 3000 RPM, normal	0.01845	2.00	1.00	0.03690
J2	MOVE FINGERS OUT OF WAY OF NEEDLE	0.00430	2.00	1.00	0.00860
F2	PEDAL START MACHINE	0.00430	2.00	1.00	0.00860
SUVF-LSS-1E	Sew 1", Singer 591 Ndl Lockstitch, 2000 RPM, exact	0.01525	2.00	1.00	0.03051
SUVE-SBB-AA	SEW BACKTACK, BUTTON	0.01505	2.00	1.00	0.03010
F2	PEDAL LIFT PRESSER FOOT AND CUT THREAD	0.00430	2.00	1.00	0.00860
0 MOD	REPEAT ELEMENTS ABOVE TO JOIN RH FACING	0.00000	1.00	1.00	0.00000
FATO-WT-PRSHFC	IRON (PRESS) SHOULDER SEAMS OF FACING, MATERNITY	0.63280	1.00	1.00	0.63280
BATS-WT-PRSHFC	HANDLING-PRESS SHLD SEAMS OF FACING, MATERNITY	0.22360	1.00	1.00	0.22360
W5	STEP FROM S/N M/C#4 TO IRONING BOARD	0.01075	12.00	1.00	0.12900
W5	WHEN COMPLETE, WALK TO TABLE #2	0.01075	8.00	1.00	0.08600
M4P0	LAY FACING ASSEMBLY TO TABLE #2	0.00860	1.00	1.00	0.00860
FATS-WT-PRSHFC	PRESS OPEN SHOULDER SEAMS OF FACING	0.40920	1.00	1.00	0.40920
SUVE-APT-SM	LAY FACING ASSEMBLY TO IRONING BOARD	0.01075	1.00	1.00	0.01075
M4G3 M3P0	STRAIGHTEN ASSY ON IRONING BOARD	0.02150	1.00	1.00	0.02150
M3G3 M3P0	FINISH STRAIGHTEN ASSY ON IRONING BOARD	0.01935	1.00	1.00	0.01935
M4G3 M2P2	GRASP AND FOLD DOWN LHS SHOULDER SEAM	0.02365	2.00	1.00	0.04730
M2G1 M2P0	FOLD DOWN OPPOSITE SIDE OF SEAM	0.01075	2.00	1.00	0.02150
J2	REGRASP WITH FINGERS TO MAKE ROOM FOR IRON	0.00430	2.00	1.00	0.00860
M4G1 M4P2	GRASP IRON; PSN TO LHS SHOULDER SEAM	0.02365	2.00	1.00	0.04730
465 MODS	TIME TO IRON LHS SHOULDER SEAM (.06 MIN EACH)	1.00000	0.12	1.00	0.12000
465 MODS	TIME TO PRESS LHS FRONT FACING JOIN (.05 MIN	1.00000	0.10	1.00	0.10000



## Company ATRC APPAREL TECH &amp; RESEARCH CENTER

Plant CAL POLY POMONACAL POLY POMONA

Part MMDU-TUNIC MATERNITY DRESS UNIFORM (TUNIC)

Component MMDU-TUNIC MATERNITY DRESS UNIFORM (TUNIC)

M4P2	ASIDE IRON; SIMO: GRASP FACING ASSY FROM	0.01290	1.00	0.01290
SATO-WT-JNFRT	SAFETYSTITCH JOIN 3 PIECE FRONT, MATERNITY TUNIC	0.88191	1.00	0.88191
BATS-WT-JNFRT	HANDLING, JOIN 3 PIECE FRONT, MATERNITY TUNIC	0.04300	1.00	0.04300
W5	STEP FROM TABLE BACK TO SAFETYSTITCH M/C #1	0.01075	1.00	0.04300
SATS-WT-JNFRT	JOIN 3 PIECE FRONT, MATERNITY TUNIC	0.83891	1.00	0.83891
SUVE-OOT-SX	OBTAIN ONE LARGE part using TWO hands-SOME	0.05160	1.00	0.05160
W5	LEAN TO TABLE TO HOLD FRONT PANEL ON	0.01075	1.00	0.02150
SUVE-OOT-SL	OBTAIN LHS FRONT PIECE FROM LH TABLE AND	0.04300	1.00	0.08600
SUVE-APP-FM	ALIGN LHS FRONT PIECE TO CENTER FRONT PANEL	0.02795	1.00	0.05590
SUVE-APN-SL	ALIGN ASSEMBLY TO NEEDLE	0.01720	1.00	0.03440
F2	PEDAL TO START MACHINE	0.00430	1.00	0.00860
SATM-WT-JN23SS	JOIN 23" SEAM, SAFETYSTITCH (SEW TIME)	0.25821	1.00	0.51641
M3P0	PULL ASSY BACK FROM NEEDLE	0.00645	1.00	0.01290
SUVE-CTS-AA	CUT THREAD WITH PALMED SNIPS	0.01290	1.00	0.02580
M4G0 M4P0	ROTATE FRONT 180 DEGREES ON TABLETOP	0.01720	1.00	0.01720
M4P0	PULL FRONT PANEL BACK TOWARD NEEDLE	0.00860	1.00	0.00860
SATO-WT-MKPKT	MAKE POCKET SAFETYSTITCH, MATERNITY TUNIC	0.49716	1.00	0.49716
BATS-WT-MKPKT	HANDLING, MAKE POCKET, MATERNITY TUNIC	0.04945	1.00	0.04945
M2G3 M3P0	GRASP BOTH POCKETS AND LIFT	0.01720	1.00	0.01720
W5	STEP TO M/C#1	0.01075	1.00	0.03225
SATS-WT-MKPKT	MAKE POCKET, MATERNITY TUNIC	0.44771	1.00	0.44771
SATM-WT-MKPKT	MAKE 1 POCKET SAFETYSTITCH, MATERNITY TUNIC	0.22386	1.00	0.44771
SATO-WT-JNTOPFR	OVERLOCK JOIN 2 SIDES OF TOP OF 3 PIECE FRONT	1.11257	1.00	1.11257
BATS-WT-JNTOPFR	HANDLING, JOIN 2 SIDES OF TOP OF 3 PC FRONT,	0.03225	1.00	0.03225
W5	STEP TO OVERLOCK M/C #2	0.01075	1.00	0.03225
SATS-WT-JNTOPFR	JOIN 2 SIDES OF TOP OF 3 PC FRONT, MATERNITY	1.08032	1.00	1.08032
M5P0	LAY FRONT TO TABLETOP HOLDING FOLDED EDGE	0.01075	1.00	0.01075
SUVE-APT-NL	FLIP GARMENT TOWARD NEEDLE	0.01075	1.00	0.01075
M2P2	MINOR ALIGN ASSEMBLY AT CORNER	0.00860	1.00	0.00860
SUVE-APS-SS	ALIGN TO END BY SLIDING FINGERS TO END	0.01720	1.00	0.03440

## Company ATRC APPAREL TECH &amp; RESEARCH CENTER

Plant CAL POLY POMONACAL POLY POMONA

Part MMDU-TUNIC MATERNITY DRESS UNIFORM (TUNIC)

Component MMDU-TUNIC MATERNITY DRESS UNIFORM (TUNIC)

SUVE-RHP-AS	REGRASP AT CORNER	0.01720	2.00	1.00	0.03440
SUVE-APN-SL	ALIGN FOLDED EDGE TO NEEDLE	0.01720	2.00	1.00	0.03440
F2	PEDAL DROP PRESSER FOOT TO HOLD FOLDED EDGE	0.00430	2.00	1.00	0.00860
M4G1 M4P0	GRASP BODY OF GARMENT AND PUSH BACK ON	0.01935	2.00	1.00	0.03870
SUVE-RHP-AS	LH REGRASP ASSEMBLY AT CORNER	0.01720	2.00	1.00	0.03440
SUVE-APP-SXS	MINOR ALIGN AT CORNER	0.01720	2.00	1.00	0.03440
F2	PEDAL START MACHINE	0.00430	2.00	1.00	0.00860
SUVF-OL-2N	Sew 2" US39500 OVERLOCK, 3250 RPM, NORMAL stop	0.01199	2.00	1.00	0.02398
J2	REGRASP TO MOVE FINGERS OUT OF WAY	0.00430	2.00	1.00	0.00860
F2	PEDAL START MACHINE	0.00430	2.00	1.00	0.00860
SUVF-OL-RED3N	Sew 3" REDUCED M/C SPD, US39500 OLOCK, 1300 RPM,	0.02722	2.00	1.00	0.05444
SUVE-RHP-AM	REGRASP TOP PLY AT END	0.01935	2.00	1.00	0.03870
SUVE-RHP-AS	REGRASP BOTTOM PLY AT END	0.01720	2.00	1.00	0.03440
SUVE-APP-SS	ALIGN ENDS OF PLYS TOGETHER	0.01935	2.00	1.00	0.03870
SUVE-RHP-AS	REGRASP ASSY (3X)	0.01720	6.00	1.00	0.10320
SUVE-APP-SXS	MINOR ALIGN PLYS	0.01720	6.00	1.00	0.10320
F2	PEDAL START MACHINE (3X)	0.00430	6.00	1.00	0.02580
SUVF-OL-RED3N	Sew 3" REDUCED M/C SPD, US39500 OLOCK, 1300 RPM,	0.02722	6.00	1.00	0.16333
SUVE-RHP-AS	REGRASP ASSEMBLY AT END	0.01720	2.00	1.00	0.03440
F2	PEDAL START MACHINE	0.00430	2.00	1.00	0.00860
SUVF-OL-RED2N	Sew 2" REDUCED SPD, US39500 OVERLOCK, 1300	0.02030	2.00	1.00	0.04060
J2	REGRASP TO MOVE FINGERS OUT OF WAY	0.00430	2.00	1.00	0.00860
F2	PEDAL START MACHINE	0.00430	2.00	1.00	0.00860
SUVF-OL-2N	Sew 2" US39500 OVERLOCK, 3250 RPM, NORMAL stop	0.01199	2.00	1.00	0.02398
M3P0	PULL ASSEMBLY FROM NEEDLE	0.00645	2.00	1.00	0.01290
SUVE-CTS-AA	CUT THREAD WITH PALMED SNIPS	0.01290	2.00	1.00	0.02580
M4G1 M4P0	FLIP BODY OF GARMENT OVER TO ACCESS OPPOSITE	0.01935	1.00	1.00	0.01935
SUVE-RHP-AM	REGRASP OPPOSITE SIDE AT TOP OF JOIN SEAM	0.01935	1.00	1.00	0.01935
SUVE-FPP-FA	PINCHFOLD PLYS AT TOP OF JOIN SEAM	0.01720	1.00	1.00	0.01720
SATO-WT-SNTOP	SGL NDL JOIN 2 SIDES OF TOP OF 3 PIECE FRONT	0.82867	1.00	1.00	0.82867

## Company ATRC APPAREL TECH &amp; RESEARCH CENTER

Plant CAL POLY POMONACAL POLY POMONA

Part MMDU-TUNIC MATERNITY DRESS UNIFORM (TUNIC)

Component MMDU-TUNIC MATERNITY DRESS UNIFORM (TUNIC)

BATS-WT-SNTOPFR	HANDLING, SGL NDL 2 SIDES OF TOP OF 3 PC FRONT,	0.04300	1.00	1.00	0.04300
W5	STEP TO OVERLOCK M/C #2	0.01075	4.00	1.00	0.04300
SATS-WT-SNTOPFR	SINGLE NDL JOIN 2 SIDES OF TOP OF 3 PC FRONT,	0.78567	1.00	1.00	0.78567
M5P0	LAY FRONT TO TABLETOP HOLDING FOLDED EDGE	0.01075	1.00	1.00	0.01075
SUVE-APN-FL	ALIGN JOINED EDGE TO NEEDLE	0.02365	2.00	1.00	0.04730
F2	PEDAL DROP PRESSER FOOT TO HOLD FOLDED EDGE	0.00430	2.00	1.00	0.00860
SUVE-SBB-AA	SEW BACKTACK, BUTTON	0.01505	2.00	1.00	0.03010
M4G1 M4P0	GRASP BODY OF GARMENT AND PUSH BACK ON	0.01935	2.00	1.00	0.03870
SUVE-RHP-AS	LH REGRASP ASSEMBLY AT CORNER	0.01720	2.00	1.00	0.03440
SUVE-RHP-AS	REGRASP ASSY (4X)	0.01720	8.00	1.00	0.13760
F2	PEDAL START MACHINE (4X)	0.00430	8.00	1.00	0.03440
SUVF-LSS-3N	Sew 3", Singer 591 Single Ndl Lockstitch, 2000 RPM, normal	0.01995	6.00	1.00	0.11971
SUVF-LSS-3E	Sew 3", Singer 591 Single Ndl Lockstitch, 2000 RPM, exact	0.02425	2.00	1.00	0.04851
F2	PEDAL TO RAISE PRESSER FOOT	0.00430	2.00	1.00	0.00860
SUVE-RPR-SL	ROTATE GARMENT 90 DEGREES AROUND NEEDLE	0.02150	2.00	1.00	0.04300
SUVE-RHP-AS	REGRASP ASSEMBLY AT END	0.01720	2.00	1.00	0.03440
F2	PEDAL START MACHINE	0.00430	2.00	1.00	0.00860
SUVF-LSS-1E	Sew 1", Singer 591 Single Ndl Lockstitch, 2000 RPM, exact	0.01525	2.00	1.00	0.03051
SUVE-SBB-AA	SEW BACKTACK, BUTTON	0.01505	2.00	1.00	0.03010
F2	PEDAL RAISE PRESSER FOOT	0.00430	2.00	1.00	0.00860
M3P0	PULL ASSEMBLY FROM NEEDLE	0.00645	2.00	1.00	0.01290
SUVE-CTS-AA	CUT THREAD WITH PALMED SNIPS	0.01290	2.00	1.00	0.02580
SUVE-CPX-FA	CUT EXTRA THREAD WITH SNIPS	0.01720	2.00	1.00	0.03440
M4G1 M4P0	FLIP BODY OF GARMENT OVER TO ACCESS OPPOSITE	0.01935	1.00	1.00	0.01935
SUVE-RHP-AM	REGRASP OPPOSITE SIDE AT TOP OF JOIN SEAM	0.01935	1.00	1.00	0.01935
SATO-WT-TSTOPFR	SGL NDL TOPSTITCH JOIN SEAM OF 3 PIECE FRONT	0.69497	1.00	1.00	0.69497
SATS-WT-TSTOPFR	TOPSTITCH JOIN SEAM OF 3 PC FRONT, MATER	0.69497	1.00	1.00	0.69497
SUVE-APT-SL	LAY FRONT FLAT TO TABLETOP	0.01505	1.00	1.00	0.01505
SUVE-APN-FL	ALIGN SEAM TO NEEDLE	0.02365	2.00	1.00	0.04730
F2	PEDAL DROP PRESSER FOOT TO HOLD FOLDED EDGE	0.00430	2.00	1.00	0.00860

## Company ATRC APPAREL TECH &amp; RESEARCH CENTER

Plant CAL POLY POMONA CAL POLY POMONA

Part MMDU-TUNIC MATERNITY DRESS UNIFORM (TUNIC)

Component MMDU-TUNIC MATERNITY DRESS UNIFORM (TUNIC)

M4G1 M2P0	REACH UNDER FRONT PANEL & PULL UNDERFOLD	0.01505	4.00	1.00	0.06020
M4P0	PULL HAND FROM UNDER FRONT PANEL (2X)	0.00860	2.00	1.00	0.01720
SUVE-RHP-AS	REGRAASP ASSY (4X)	0.01720	8.00	1.00	0.13760
F2	PEDAL START MACHINE (4X)	0.00430	8.00	1.00	0.03440
SUVF-LSS-3N	Sew 3", Singer 591 Single Ndl Lockstitch, 2000 RPM, normal	0.01995	6.00	1.00	0.11971
SUVF-LSS-3E	Sew 3", Singer 591 Single Ndl Lockstitch, 2000 RPM, exact	0.02425	2.00	1.00	0.04851
SUVE-SBB-AA	SEW BACKTACK, BUTTON	0.01505	2.00	1.00	0.03010
F2	PEDAL RAISE PRESSER FOOT	0.00430	2.00	1.00	0.00860
M3P0	PULL ASSEMBLY FROM NEEDLE	0.00645	2.00	1.00	0.01290
SUVE-CP5-FS	CUT THREAD WITH SNIPS	0.04085	2.00	1.00	0.08170
SUVE-CPX-FA	CUT EXTRA THREAD WITH SNIPS	0.01720	2.00	1.00	0.03440
M4G1 M4P0	FLIP BODY OF GARMENT OVER TO ACCESS OPPOSITE	0.01935	1.00	1.00	0.01935
SUVE-RHP-AM	REGRAASP OPPOSITE SIDE AT TOP OF JOIN SEAM	0.01935	1.00	1.00	0.01935
SATO-WT-TSBOX8	SGL NDL TOPSTITCH 8" BOX, MATERNITY TUNIC	1.22627	1.00	1.00	1.22627
SATS-WT-TSBOX8	SGL NDL TOPSTITCH 8" BOX, MATER TUNIC	1.22627	1.00	1.00	1.22627
M4G1 M4P0	GRASP FRONT AND PULL BACK	0.01935	1.00	1.00	0.01935
465 MODS	TIME TO ROTATE PRESSER FOOT	1.00000	0.05	1.00	0.05000
SUVE-RHP-AS	REGRAASP FRONT PANEL	0.01720	1.00	1.00	0.01720
SUVE-APN-FM	ALIGN ALONG SEAM TO NEEDLE	0.02150	2.00	1.00	0.04300
SUVE-RNW-AA	REPOSITION NEEDLE USING HANDWHEEL	0.02365	2.00	1.00	0.04730
F2	DROP PRESSER FOOT	0.00430	2.00	1.00	0.00860
SUVE-RHP-AL	REGRAASP UNDERNEATH PLYS OF FRONT PANEL	0.02150	2.00	1.00	0.04300
J2	JUGGLE TO PSN FINGERS BETWEEN PLYS OF PLEAT	0.00430	2.00	1.00	0.00860
J2	REGRAASP AND HOLD PLEAT IN PLACE	0.00430	2.00	1.00	0.00860
SUVE-RHP-AL	REGRAASP FRONT OF PANEL	0.02150	2.00	1.00	0.04300
F2	PEDAL TO START SEW	0.00430	2.00	1.00	0.00860
SUVF-LSS-RED1E	Sew 1" REDUCED SPD, Singer 591 SN LS, 500	0.02875	2.00	1.00	0.05751
SUVE-RPR-FL	ROTATE FRONT AROUND NEEDLE	0.02795	2.00	1.00	0.05590
SATM-WT-CR8INSM	CREASE 8" SEAM	0.10535	1.00	1.00	0.10535
SUVE-RHP-AL	REGRAASP PLYS UNDERNEATH 2X	0.02150	4.00	1.00	0.08600

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Part MMDU-TUNIC MATERNITY DRESS UNIFORM (TUNIC)

Component MMDU-TUNIC MATERNITY DRESS UNIFORM (TUNIC)

M2P2	PULL UNDERNEATH PLYS OUT OF WAY 2X	0.00860	4.00	1.00	0.03440
SUVE-RHP-AL	REGRAASP FRONT PANEL 2X	0.02150	4.00	1.00	0.08600
M3P0	RUB FINGER ALONG SEAM TO ENSURE BOTTOM PLYS	0.00645	8.00	1.00	0.05160
F2	PEDAL TO START MACHINE 2X	0.00430	4.00	1.00	0.01720
SUVE-LSS-RED3N	Sew 3" REDUCED SPD, Singer 591 SN LS, 1000	0.03345	4.00	1.00	0.13381
SUVE-RHP-AM	REGRAASP FRONT PANEL	0.01935	2.00	1.00	0.03870
F2	PEDAL START MACHINE	0.00430	2.00	1.00	0.00860
SUVE-LSS-RED1N	Sew 1" REDUCED SPD, Singer 591 SN LS, 500 RPM, normal	0.02445	2.00	2.00	0.02445
SUVE-LSS-RED1E	Sew 1" REDUCED SPD, Singer 591 SN LS, 500	0.02875	2.00	1.00	0.05751
SUVE-RNW-AA	REPOSITION NEEDLE USING HANDWHEEL	0.02365	2.00	1.00	0.04730
F2	PEDAL TO CUT THREAD	0.00430	2.00	1.00	0.00860
SUVE-CPS-FS	CUT THREAD WITH SNIPS	0.04085	2.00	1.00	0.08170
SUVE-CPX-FA	CUT 1 MORE THREADS WITH SNIPS	0.01720	2.00	1.00	0.03440
SATO-WT-CLBK	OVERLOCK CLEAN 2 BACK PIECES, MATERNITY TUNIC	0.75764	1.00	1.00	0.75764
BATS-WT-CLBACK	HANDLING, OLOCK CLEAN BACK PIECES	0.07525	1.00	1.00	0.07525
SUVE-OTT-NL	OBTAIN 2 BACK PLYS WITH BOTH HANDS	0.04300	1.00	1.00	0.04300
W5	STEP FROM TABLE BACK TO M/C#2	0.01075	3.00	1.00	0.03225
SATS-WT-CLBK	OVERLOCK CLEAN BACK PIECES	0.68239	1.00	1.00	0.68239
SUVE-APT-SL	LAY BACK PIECES TO MACHINE TABLE	0.01505	1.00	1.00	0.01505
SUVE-FPS-SL	FOLD TOP PLY BACK	0.02795	2.00	1.00	0.05590
SUVE-RHP-AL	REGRAASP BOTTOM PLY	0.02150	2.00	1.00	0.04300
SUVE-APN-SM	ALIGN BOTTOM PLY TO NEEDLE	0.01505	2.00	1.00	0.03010
SATM-WT-CL32	OVERLOCK CLEAN 32 INCH SIDE	0.19070	2.00	1.00	0.38139
SUVE-CPS-SA	CUT THREADS WITH SNIPS	0.03440	2.00	1.00	0.06880
SUVE-CPX-FA	CUT 2ND THREAD WITH SNIPS	0.01720	1.00	1.00	0.01720
M2G1	GRASP FOLDED BACK CORNER OF TOP PLY	0.00645	1.00	1.00	0.00645
SUVE-APP-SM	ALIGN CORNERS OF TOP AND BOTTOM PLYS	0.02150	1.00	1.00	0.02150
SUVE-RHP-AM	REGRAASP ASSY	0.01935	1.00	1.00	0.01935
M4P0	LIFT ASSY FROM TABLE	0.00860	1.00	1.00	0.00860
SUVE-APT-SL	ROTATE ASSY UPSIDE DOWN TO TABLETOP	0.01505	1.00	1.00	0.01505

## Company ATRC APPAREL TECH &amp; RESEARCH CENTER

Plant CAL POLY POMONACAL POLY POMONA

Part MMDU-TUNIC MATERNITY DRESS UNIFORM (TUNIC)

Component MMDU-TUNIC MATERNITY DRESS UNIFORM (TUNIC)

SATO-WT-JNBK	JOIN BACK PIECES, MATERNITY TUNIC	0.35461	1.00	1.00	0.35461
BATS-WT-JNBK	HANDLING, JOIN BACK PIECES, MATERNITY TUNIC	0.03225	1.00	1.00	0.03225
W5	STEP TO M/C#3	0.01075	3.00	1.00	0.03225
SATS-WT-JNBK	JOIN BACK PIECES, MATERNITY TUNIC	0.32236	1.00	1.00	0.32236
SUVE-APP-FL	ALIGN BOTTOM CORNERS OF 2 BACK PIECES	0.03010	1.00	1.00	0.03010
SUVE-APN-SL	ALIGN ASSY UNDER PRESSER FOOT	0.01720	1.00	1.00	0.01720
F2	DROP PRESSER FOOT	0.00430	1.00	1.00	0.00430
SUVE-SBB-AA	SEW BACKTACK, BUTTON	0.01505	1.00	1.00	0.01505
SUVE-RHP-AM	REGRASP ASSY	0.01935	1.00	1.00	0.01935
SUVE-APP-SS	MINOR ALIGN PLYS	0.01935	1.00	1.00	0.01935
SUVE-RHP-AS	REGRASP ASSY 5X	0.01720	5.00	1.00	0.08600
F2	PEDAL START MACHINE 5X	0.00430	5.00	1.00	0.02150
SUVF-LSS-2N	Sew 2" Singer 591 Single Ndl Lockstitch, 2000 RPM, normal	0.01545	4.00	1.00	0.06181
SUVF-LSS-2E	Sew 2" Singer 591 Single Ndl Lockstitch, 2000 RPM, exact	0.01975	1.00	1.00	0.01975
SUVE-SBB-AA	SEW BACKTACK, BUTTON	0.01505	1.00	1.00	0.01505
F2	PEDAL TO CUT THREAD & LIFT PRESSER FOOT	0.00430	1.00	1.00	0.00430
M4P0	PULL FROM UNDER NEEDLE	0.00860	1.00	1.00	0.00860
SATO-WT-SETZIP	SET ZIPPER, MATERNITY TUNIC	1.13483	1.00	1.00	1.13483
SATS-WT-SETZIP	SET ZIPPER TO BACK PANEL, MATERNITY TUNIC	1.13483	1.00	1.00	1.13483
465 MODS	TIME TO ROTATE PRESSER FOOT	1.00000	0.05	1.00	0.05000
M4G3 M4P2	GRASP FRONT/BACK PANELS FROM TABLE; FLIP	0.02795	1.00	1.00	0.02795
SUVE-FPS-NS	FOLD BACK TOP OF TOP PLY	0.01505	1.00	1.00	0.01505
SUVE-APN-SS	ALIGN TOP OF BOTTOM PLY UNDER NEEDLE	0.01290	1.00	1.00	0.01290
SUVE-FPS-NL	FOLD BACK TOP PLY & LET DROP OFF TABLE	0.02365	1.00	1.00	0.02365
W5	STEP TO TABLE	0.01075	3.00	1.00	0.03225
M2G3 M4P0	LH OBTAIN ZIPPER FROM TABLE	0.01935	1.00	1.00	0.01935
M4G3	RH GRASP ZIPPER HANDLE	0.01505	1.00	1.00	0.01505
J2	LH REGRASP	0.00430	1.00	1.00	0.00430
M4P0	RH UNZIP ZIPPER	0.00860	1.00	1.00	0.00860
SUVE-RHP-AM	RH REGRASP ZIPPER; SIMO: STEP TO M/C INT. TO	0.01935	1.00	1.00	0.01935

## Company ATRC APPAREL TECH &amp; RESEARCH CENTER

Plant CAL POLY POMONACAL POLY POMONA

Part MMDU-TUNIC MATERNITY DRESS UNIFORM (TUNIC)

Component MMDU-TUNIC MATERNITY DRESS UNIFORM (TUNIC)

SUVE-APP-FS	ALIGN ZIPPER TO TOP OF BACK PANEL	0.02580	1.00	0.02580
F2	PEDAL START MACHINE TO SEW ONTO ZIPPER	0.00430	1.00	0.00430
SUVF-LSS-RED1N	Sew 1" REDUCED SPD,Singer 591 SN LS,500 RPM,normal	0.02445	1.00	0.02445
SUVE-APS-FL	ALIGN ZIPPER BY SLIDING FINGERS TO BOTTOM OF	0.02795	1.00	0.02795
SUVE-RHP-AS	LH REGRASP ASSY APPROX. 3" FROM NEEDLE 6X	0.01720	1.00	0.01720
F2	PEDAL TO START MACHINE 6X	0.00430	1.00	0.00430
SUVF-LSS-3N	Sew 3",Singer 591 Single Ndl Lockstitch,2000 RPM,normal	0.01995	1.00	0.01995
M5G3	LH GRASP OPPOSITE SIDE ZIPPER HANGING IN	0.01720	1.00	0.01720
J2	REGRASP ZIPPER	0.00430	1.00	0.00430
M2G1	LH GRASP OPPOSITE SIDE BACK HANGING IN FRONT	0.00645	1.00	0.00645
M5P2	PULL BACK UP ONTO MACHINE TABLE	0.01505	1.00	0.01505
SUVE-RHP-AM	REGRASP END OF ZIPPER APPROX 3" IN FRONT OF	0.01935	1.00	0.01935
SUVE-APP-FS	ALIGN END OF ZIPPER TO BACK PANEL	0.02580	1.00	0.02580
F2	PEDAL TO START SEW AND COMPLETE 1ST SIDE	0.00430	1.00	0.00430
SUVF-LSS-RED3N	Sew 3" REDUCED SPD,Singer 591 SN LS,1000	0.03345	1.00	0.03345
SUVE-SBB-AA	SEW BACKTACK, BUTTON	0.01505	1.00	0.01505
F2	PEDAL TO CUT THREAD & LIFT FOOT	0.00430	1.00	0.00430
M4P0	PULL GARMENT FROM UNDER NEEDLE	0.00860	1.00	0.00860
M4G1 M4P0	GRASP AT BOTTOM OF ZIPPER & LIFT FROM TABLE	0.01935	1.00	0.01935
SUVE-APP-FS	ALIGN OPPOSITE SIDE OF ZIPPER AT BOTTOM TO	0.02580	1.00	0.02580
SUVE-APN-FL	ALIGN ASSY UNDER NEEDLE	0.02365	1.00	0.02365
F2	DROP PRESSER FOOT	0.00430	1.00	0.00430
SUVE-SBB-AA	SEW BACKTACK, BUTTON	0.01505	1.00	0.01505
SUVE-APS-FL	ALIGN ZIPPER BY SLIDING FINGERS TO BOTTOM OF	0.02795	1.00	0.02795
SUVE-RHP-AS	LH REGRASP ASSY APPROX. 3" FROM NEEDLE 7X	0.01720	1.00	0.01720
F2	PEDAL START MACHINE 7X	0.00430	1.00	0.00430
SUVF-LSS-3N	Sew 3",Singer 591 Single Ndl Lockstitch,2000 RPM,normal	0.01995	1.00	0.01995
SUVF-LSS-3E	Sew 3",Singer 591 Single Ndl Lockstitch,2000 RPM,exact	0.02425	1.00	0.02425
F2	PEDAL TO CUT THREAD AND LIFT PRESSER FOOT	0.00430	1.00	0.00430
M3P0	PULL GARMENT FROM UNDER NEEDLE	0.00645	1.00	0.00645

## Company ATRC APPAREL TECH &amp; RESEARCH CENTER

Plant CAL POLY POMONACAL POLY POMONA

Part MMDU-TUNIC MATERNITY DRESS UNIFORM (TUNIC)

Component MMDU-TUNIC MATERNITY DRESS UNIFORM (TUNIC)

SATO-WT-TSZIP	TOPSTITCH ZIPPER, MATERNITY TUNIC	1.05048	1.00	1.00	1.05048
SATS-WT-TSZIP	TOPSTITCH ZIPPER, MATERNITY TUNIC	1.05048	1.00	1.00	1.05048
M4G3 M4P0	GRASP TOP OF ZIPPER; LIFT FROM TABLETOP	0.02365	1.00	1.00	0.02365
SUVE-FPS-FS	FOLD SIDE OF ZIPPER BACK	0.02580	1.00	1.00	0.02580
J2	REGRASP ZIPPER ASSY	0.00430	1.00	1.00	0.00430
SUVE-APN-SS	ALIGN TOP OF LHS ZIPPER UNDER NEEDLE	0.01290	1.00	1.00	0.01290
F2	PEDAL START MACHINE TO SEW ONTO ZIPPER	0.00430	1.00	1.00	0.00430
SUVE-SBB-AA	SEW BACKTACK, BUTTON	0.01505	1.00	1.00	0.01505
M5G1	BH REGRASP GARMENT TOWARD BOTTOM OF ZIPPER	0.01290	1.00	1.00	0.01290
J2	REGRASP FABRIC IN LH	0.00430	1.00	1.00	0.00430
M3G1	LH GRASP ZIPPER AT BOTTOM	0.00860	1.00	1.00	0.00860
SUVE-FPS-SM	FOLD ZIPPER TO BACK	0.02365	1.00	1.00	0.02365
J2	RH REGRASP TO HOLD ZIPPER FOLDED BACK	0.00430	1.00	1.00	0.00430
SUVE-RHP-AL	LH REGRASP APPROX. 3" IN FRONT OF NEEDLE	0.02150	1.00	1.00	0.02150
F2	PEDAL START MACHINE	0.00430	1.00	1.00	0.00430
SUVF-LSS-RED3N	Sew 3" REDUCED SPD, Singer 591 SN LS, 1000	0.03345	1.00	1.00	0.03345
SUVE-RHP-AS	LH REGRASP ASSY APPROX. 3" FROM NEEDLE 5X	0.01720	5.00	1.00	0.08600
F2	PEDAL TO START MACHINE 5X	0.00430	5.00	1.00	0.02150
SUVF-LSS-3N	Sew 3", Singer 591 Single Ndl Lockstitch, 2000 RPM, normal	0.01995	5.00	1.00	0.09976
M5G3	LH GRASP OPPOSITE SIDE BACK HANGING IN FRONT	0.01720	1.00	1.00	0.01720
M5P2	PULL BACK UP ONTO MACHINE TABLE	0.01505	1.00	1.00	0.01505
SUVE-RHP-AL	LH REGRASP AT BOTTOM OF ZIPPER	0.02150	1.00	1.00	0.02150
M2G3	RH GRASP ZIPPER	0.01075	1.00	1.00	0.01075
M3P0	RH ZIP ZIPPER PAST PRESSER FOOT	0.00645	1.00	1.00	0.00645
F2	PEDAL TO START SEW AND COMPLETE 1ST SIDE	0.00430	1.00	1.00	0.00430
SUVF-LSS-RED3N	Sew 3" REDUCED SPD, Singer 591 SN LS, 1000	0.03345	1.00	1.00	0.03345
SUVF-LSS-RED1E	SEW BACKTACK, BUTTON	0.02875	1.00	1.00	0.02875
F2	PEDAL TO LIFT PRESSER FOOT	0.00430	1.00	1.00	0.00430
SUVE-RPR-FM	ROTATE GARMENT AROUND NEEDLE	0.02580	1.00	1.00	0.02580
SUVE-RHP-AS	REGRASP AT BOTTOM OF ZIPPER	0.01720	1.00	1.00	0.01720



Company ATRC APPAREL TECH &amp; RESEARCH CENTER

Plant CAL POLY POMONA CAL POLY POMONA

Part MMDU-TUNIC MATERNITY DRESS UNIFORM (TUNIC)

Component MMDU-TUNIC MATERNITY DRESS UNIFORM (TUNIC)

F2	PEDAL START MACHINE	0.00430	1.00	1.00	0.00430
SUVF-LSS-REDIE	ALIGN ASSY UNDER NEEDLE	0.02875	1.00	1.00	0.02875
SUVE-RPR-FL	ROTATE BACK PANEL AROUND NEEDLE TO SEW 2ND	0.02795	1.00	1.00	0.02795
M4G3 M5P0	GRASP ZIPPER AND ZIP TO END	0.02580	1.00	1.00	0.02580
SUVE-RHP-AL	REGRASP BACK PANEL	0.02150	1.00	1.00	0.02150
F2	PEDAL START MACHINE	0.00430	1.00	1.00	0.00430
SUVF-LSS-3N	Sew 3", Singer 591 Single Ndl Lockstitch, 2000 RPM, normal	0.01995	1.00	1.00	0.01995
SUVE-RHP-AS	LH REGRASP ASSY APPROX. 3" FROM NEEDLE 6X	0.01720	6.00	1.00	0.10320
F2	PEDAL START MACHINE 6X	0.00430	6.00	1.00	0.02580
SUVF-LSS-3N	Sew 3", Singer 591 Single Ndl Lockstitch, 2000 RPM, normal	0.01995	6.00	1.00	0.11971
SUVE-RHP-AS	REGRASP AND MOVE FINGERS OUT OF WAY	0.01720	1.00	1.00	0.01720
F2	PEDAL TO START MACHINE	0.00430	1.00	1.00	0.00430
SUVF-LSS-REDIE	Sew 1" REDUCED SPD, Singer 591 SN LS, 500	0.02875	1.00	1.00	0.02875
SUVE-SBB-AA	SEW BACKTACK, BUTTON	0.01505	1.00	1.00	0.01505
F2	PEDAL TO CUT THREAD AND LIFT PRESSER FOOT	0.00430	1.00	1.00	0.00430
M4P0	PULL GARMENT FROM UNDER NEEDLE	0.00860	1.00	1.00	0.00860
SATO-WT-JNSHLD	JOIN SHOULDER, MATERNITY TUNIC	0.52291	1.00	1.00	0.52291
SATS-WT-JNSHLD	JOIN SHOULDER, MATERNITY TUNIC	0.52291	1.00	1.00	0.52291
465 MODS	TIME TO ROTATE PRESSER FOOT	1.00000	0.05	1.00	0.05000
SUVE-RHP-AM	REGRASP BACK PANEL ON TABLETOP	0.01935	1.00	1.00	0.01935
SUVE-APN-SM	ALIGN SHOULDER UNDER NEEDLE	0.01505	1.00	1.00	0.01505
SUVE-OOT-SL	OBTAIN FRONT PANEL FROM FRONT OF M/C TABLE;	0.04300	1.00	1.00	0.04300
SUVE-RHP-AL	REGRASP SHOULDER OF FRONT PANEL	0.02150	2.00	1.00	0.04300
SUVE-APP-FM	ALIGN RHS SHOULDER FRONT TO BACK	0.02795	2.00	1.00	0.05590
SUVE-APN-SS	ALIGN ASSY UNDER NEEDLE	0.01290	2.00	1.00	0.02580
F2	DROP PRESSER FOOT	0.00430	2.00	1.00	0.00860
SUVE-SBB-AA	SEW BACKTACK, BUTTON	0.01505	2.00	1.00	0.03010
SUVE-RHP-AM	REGRASP TOP PLY AT OPPOSITE SIDE OF SHOULDER	0.01935	2.00	1.00	0.03870
SUVE-APP-FM	ALIGN OPPOSITE END SHOULDER	0.02795	2.00	1.00	0.05590
SUVE-RHP-AM	REGRASP TOWARD CENTER OF SHOULDER	0.01935	2.00	1.00	0.03870

## Company ATRC APPAREL TECH &amp; RESEARCH CENTER

Plant CAL POLY POMONACAL POLY POMONA

Part MMDU-TUNIC MATERNITY DRESS UNIFORM (TUNIC)

Component MMDU-TUNIC MATERNITY DRESS UNIFORM (TUNIC)

F2	PEDAL TO START SEW	0.00430	2.00	1.00	0.00860
SUVF-LSS-5E	Sew 5", Singer 591 Single Ndl Lockstitch, 3000 RPM, exact	0.02575	2.00	1.00	0.05151
SUVE-SBB-AA	SEW BACKTACK, BUTTON	0.01505	2.00	1.00	0.03010
F2	PEDAL TO CUT THREAD AND LIFT PRESSER FOOT	0.00430	2.00	1.00	0.00860
0 MOD	REPEAT ELEMENTS ABOVE TO JOIN LHS SHOULDER	0.00000	1.00	1.00	0.00000
FATO-WT-PRSHLD	IRON TO PRESS OPEN SHOULDER	1.34415	1.00	1.00	1.34415
BATS-WT-PRSHLD	HANDLING, PRESS OPEN SHOULDER, MATERNITY TUNIT	0.08600	1.00	1.00	0.08600
W5	STEP TO IRONING BOARD	0.01075	8.00	1.00	0.08600
FATS-WT-PRSHLD	PRESS OPEN SHOULDER, MATERNITY TUNIC	1.25815	1.00	1.00	1.25815
SUVE-APT-SL	LAY GARMENT OPEN TO IRONING BOARD	0.01505	1.00	1.00	0.01505
M4G3 M2P0	GRASP FABRIC AND TUG TO PULL WRINKLES OUT 2X	0.01935	2.00	1.00	0.03870
M4G1 M4P2	GRASP IRON AND POSITION TO ZIPPER SET SEAMS	0.02365	1.00	1.00	0.02365
465 MODS	TIME TO IRON BACK SEAM AND ZIPPER	1.00000	0.07	1.00	0.06600
M4P2	ASIDE IRON	0.01290	1.00	1.00	0.01290
M4G3 M4P0	GRASP GARMENT WITH BOTH HANDS AND LIFT FROM	0.02365	1.00	1.00	0.02365
SUVE-APT-SL	LAY GARMENT TO IRONING BOARD	0.01505	1.00	1.00	0.01505
M4G3 M1P0	GRASP SHOULDER SEAM & FOLD OVER 2X	0.01720	2.00	1.00	0.03440
J2	REGRASP TO HOLD SEAM OPEN 2X	0.00430	2.00	1.00	0.00860
M4G1 M4P2	GRASP IRON AND PSN TO SEAM 2X	0.02365	2.00	1.00	0.04730
465 MODS	TIME TO IRONG SHOULDER SEAM (.041 MIN PER	1.00000	0.08	1.00	0.08200
M4P2	ASIDE IRON 2X	0.01290	2.00	1.00	0.02580
M4G3 M4P0	GRASP FRONT PANEL AT UNDERARM; PULL BACK	0.02365	1.00	1.00	0.02365
M3G1 M2P0	GRASP SIDES OF FRONT; PULL WRINKLES OUT	0.01290	1.00	1.00	0.01290
M4G1 M4P2	GRASP IRON; PSN TO FRONT TOP	0.02365	1.00	1.00	0.02365
465 MODS	TIME TO IRON TOP OF FRONT PANEL	1.00000	0.17	1.00	0.17000
M4P2	ASIDE IRON	0.01290	1.00	1.00	0.01290
M4G1 M4P2	GRASP FRONT PANEL; LAY SIDEWAYS ONTO TABLE	0.02365	1.00	1.00	0.02365
M3G1 M2P0	GRASP ENDS AND PULL WRINKLES OUT 2X	0.01290	2.00	1.00	0.02580
M3P2	PSN LH TO TOP OF FRONT PLEAT 2X	0.01075	2.00	1.00	0.02150
M3P0	INSERT LH TO TOP OF PLEAT & HOLD 2X	0.00645	2.00	1.00	0.01290

## Company ATRC APPAREL TECH &amp; RESEARCH CENTER

Plant CAL POLY POMONACAL POLY POMONA

Part MMDU-TUNIC MATERNITY DRESS UNIFORM (TUNIC)

Component MMDU-TUNIC MATERNITY DRESS UNIFORM (TUNIC)

SUVE-FPS-SM	RH GRASP BOTTOM OF PLEAT AND FOLD TO CENTER	0.02365	2.00	1.00	0.04730
SUVE-RHP-AM	LH REGRASP TO HOLD PLEAT 2X	0.01935	2.00	1.00	0.03870
M4G1 M4P2	RH GRASP IRON AND POSITION TO PLEAT 2X	0.02365	2.00	1.00	0.04730
465 MODS	TIME TO IRON 1 PLEAT (.1 MINUTES, 2 PLEATS)	1.00000	0.20	1.00	0.20000
M4P2	ASIDE IRON 2X	0.01290	2.00	1.00	0.02580
M4G1 M4P2	GRASP AND PULL FRONT ONTO IRONING BOARD TO	0.02365	1.00	1.00	0.02365
M4G3 M4P2	GRASP AND ROTATE TOP FRONT ONTO IRONING	0.02795	1.00	1.00	0.02795
M3G3 M2P0	PULL WRINKLES OUT	0.01720	1.00	1.00	0.01720
M4G1 M4P2	GRASP IRON; PSN TO TOP FRONT	0.02365	1.00	1.00	0.02365
465 MODS	TIME TO IRON TOP FRONT	1.00000	0.05	1.00	0.05000
M4P2	ASIDE IRON	0.01290	1.00	1.00	0.01290
M4G3 M4P0	GRASP AND LIFT GARMENT FROM IRONING BOARD	0.02365	1.00	1.00	0.02365
SATO-WT-JNAHFC	JOIN FACING TO BODY AT ARMHOLE, MATERNITY TUNIC	2.96682	1.00	1.00	2.96682
BATS-WT-JNAHFC	HANDLING, JOIN ARMHOLE FACING, MATERNITY TUNIC	0.14190	1.00	1.00	0.14190
W5	STEP FROM IRONING BOARD TO TABLE	0.01075	8.00	1.00	0.08600
SUVE-OOO-NM	OBTAIN FACING ASSY FROM TABLE	0.02365	1.00	1.00	0.02365
W5	STEP FROM TABLE TO LOCKSTITCH M/C #4	0.01075	3.00	1.00	0.03225
SATS-WT-JNFCAH	JOIN FACING TO ARMHOLE & TOPSTITCH, MATERNITY	2.82492	1.00	1.00	2.82492
SUVE-APN-SL	PSN END OF ARMHOLE FACING UNDER NEEDLE TO	0.01720	1.00	1.00	0.01720
M4G1	GRASP GARMENT	0.01075	1.00	1.00	0.01075
SUVE-APT-SL	LAY GARMENT OPEN TO TABLE	0.01505	1.00	1.00	0.01505
SUVE-CPS-FS	CUT TOP OF LHS ZIPPER W/SCISSORS	0.04085	1.00	1.00	0.04085
X4	EXTRA FORCE TO CUT PLYS	0.00860	1.00	1.00	0.00860
SUVE-CPX-FA	CUT RHS ZIPPER W/SCISSORS	0.01720	1.00	1.00	0.01720
X4	EXTRA FORCE TO CUT PLYS	0.00860	1.00	1.00	0.00860
M4G3 M4P0	GRASP GARMENT FROM TABLE AND LIFT	0.02365	1.00	1.00	0.02365
SUVE-APP-FM	ALIGN RH ARMHOLES OF FACING AND GARMENT	0.02795	1.00	1.00	0.02795
SATM-WT-JNFCAH	JOIN INTERFACING AT RH ARMHOLE, 22" SEAM	0.64132	1.00	1.00	0.64132
SATM-WT-CUT3	MAKE 3 CUTS IN FRONT AND BACK CURVE OF RH	0.15695	1.00	1.00	0.15695
SATM-WT-TSFCAH	TOPSTITCH INTERFACING AT RH ARMHOLE, 22" SEAM	0.46262	1.00	1.00	0.46262

## Company ATRC APPAREL TECH &amp; RESEARCH CENTER

Plant CAL POLY POMONACAL POLY POMONA

Part MMDU-TUNIC MATERNITY DRESS UNIFORM (TUNIC)

Component MMDU-TUNIC MATERNITY DRESS UNIFORM (TUNIC)

SUVE-RHP-AL	GRASP LH ARMHOLE SHOULDER SEAM	0.02150	1.00	1.00	0.02150
SUVE-RHP-AM	REGRASP AND GRASP LH ARMHOLE SHOULDER SEAM	0.01935	1.00	1.00	0.01935
SUVE-APP-FS	ALIGN LH SHOULDER SEAM AND FACING	0.02580	1.00	1.00	0.02580
M5P2	TURN UPSIDE DOWN TOWARD NEEDLE	0.01505	1.00	1.00	0.01505
M4G3	LH GRASP END OF ARMHOLE	0.01505	1.00	1.00	0.01505
M2G3	RH GRASP END OF ARMHOLE FACING	0.01075	1.00	1.00	0.01075
SUVE-APP-FS	ALIGN ENDS OF LH ARMHOLE TOGETHER	0.02580	1.00	1.00	0.02580
SATM-WT-JNFCALH	JOIN INTERFACING AT LH ARMHOLE, 22" SEAM	0.64132	1.00	1.00	0.64132
SATM-WT-CUT3	MAKE 3 CUTS IN FRONT AND BACK CURVE OF LH	0.15695	1.00	1.00	0.15695
SATM-WT-TSFCALH	TOPSTITCH INTERFACING AT LH ARMHOLE, 22" SEAM	0.46262	1.00	1.00	0.46262
SATO-WT-JNFCNK	JOIN & TOPSTITCH FACING TO BODY AT NECKLINE,	3.13555	1.00	1.00	3.13555
SATS-WT-JNFCNK	JOIN FACING TO NECK, MATERNITY TUNIC	1.49172	1.00	1.00	1.49172
465 MODS	TIME TO FINESSE FABRIC AND ALIGN END OF FACING	1.00000	0.49	1.00	0.49000
F2	PEDAL TO START MACHINE	0.00430	1.00	1.00	0.00430
SUVE-SBB-AA	SEW BACKTACK, BUTTON	0.01505	1.00	1.00	0.01505
SUVE-RHP-AM	REGRASP GARMENT AT SHOULDER SEAM	0.01935	1.00	1.00	0.01935
SUVE-APP-FM	ALIGN SHOULDER SEAMS OF FACING AND BODY	0.02795	1.00	1.00	0.02795
SUVE-RHP-AS	LH REGRASP ASSY	0.01720	1.00	1.00	0.01720
SUVE-APP-SS	MINOR ALIGN SEAM	0.01935	1.00	1.00	0.01935
F2	PEDAL TO START SEW	0.00430	1.00	1.00	0.00430
SUVE-LSS-RED3N	Sew 3" REDUCED SPD,Singer 591 SN LS,1000	0.03345	1.00	1.00	0.03345
SUVE-RHP-AS	LH REGRASP ASSY	0.01720	1.00	1.00	0.01720
F2	PEDAL START MACHINE	0.00430	1.00	1.00	0.00430
SUVE-LSS-RED3N	Sew 3" REDUCED SPD,Singer 591 SN LS,1000	0.03345	1.00	1.00	0.03345
SUVE-RHP-AM	REGRASP AT CENTER NECKLINE	0.01935	1.00	1.00	0.01935
SUVE-APP-FS	ALIGN CENTER NECKLINE FACING TO BODY	0.02580	1.00	1.00	0.02580
M4G1 M4P0	LH GRASP BODY OF GARMENT AND PUSH BACK ONTO	0.01935	2.00	1.00	0.03870
SUVE-RHP-AS	LH REGRASP ASSY 3X	0.01720	3.00	1.00	0.05160
SUVE-APP-SS	MINOR ALIGN SEAM 3X	0.01935	3.00	1.00	0.05805
F2	PEDAL START MACHINE 3X	0.00430	3.00	1.00	0.01290

## Company ATRC APPAREL TECH &amp; RESEARCH CENTER

Plant CAL POLY POMONACAL POLY POMONA

Part MMDU-TUNIC MATERNITY DRESS UNIFORM (TUNIC)

Component MMDU-TUNIC MATERNITY DRESS UNIFORM (TUNIC)

SUVF-LSS-3N	Sew 3", Singer 591 Single Ndl Lockstitch, 2000 RPM, normal	0.01995	2.00	1.00	0.03990
SUVF-LSS-3E	Sew 3", Singer 591 Single Ndl Lockstitch, 2000 RPM, exact	0.02425	1.00	1.00	0.02425
F2	PEDAL RAISE PRESSER FOOT	0.00430	1.00	1.00	0.00430
SUVE-RPR-FM	ROTATE GARMENT AROUND NEEDLE AT "V"	0.02580	1.00	1.00	0.02580
F2	PEDAL DROP PRESSER FOOT	0.00430	1.00	1.00	0.00430
SUVE-RHP-AM	REGRASP AT SHOULDER	0.01935	1.00	1.00	0.01935
SUVE-APP-FS	ALIGN SHOULDER SEAMS OF BODY AND FACING	0.02580	1.00	1.00	0.02580
M4G1 M4P0	LH GRASP BODY OF GARMENT AND PUSH BACK ONTO	0.01935	2.00	1.00	0.03870
SUVE-RHP-AS	LH REGRASP ASSY 3X	0.01720	2.00	1.00	0.03440
SUVE-APP-SS	MINOR ALIGN SEAM 3X	0.01935	3.00	1.00	0.05805
F2	PEDAL START MACHINE 3X	0.00430	3.00	1.00	0.01290
SUVF-LSS-3N	Sew 3", Singer 591 Single Ndl Lockstitch, 2000 RPM, normal	0.01995	2.00	1.00	0.03990
SUVF-LSS-RED3N	Sew 3" REDUCED SPD, Singer 591 SN LS, 1000	0.03345	1.00	1.00	0.03345
SUVE-RHP-AM	REGRASP AT END	0.01935	1.00	1.00	0.01935
SUVE-APP-FM	ALIGN ENDS OF BODY AND FACING	0.02795	1.00	1.00	0.02795
SUVE-RHP-AM	LH REGRASP AND HOLD	0.01935	1.00	1.00	0.01935
SUVE-APP-SS	MINOR ALIGN SEAM	0.01935	1.00	1.00	0.01935
F2	PEDAL START MACHINE	0.00430	1.00	1.00	0.00430
SUVF-LSS-RED3N	Sew 3" REDUCED SPD, Singer 591 SN LS, 1000	0.03345	1.00	1.00	0.03345
SUVE-RHP-AS	REGRASP END TO MOVE FINGERS OUT OF WAY OF	0.01720	1.00	1.00	0.01720
F2	PEDAL START MACHINE	0.00430	1.00	1.00	0.00430
SUVF-LSS-3E	Sew 3", Singer 591 Single Ndl Lockstitch, 2000 RPM, exact	0.02425	1.00	1.00	0.02425
SUVE-SBB-AA	SEW BACKTACK, BUTTON	0.01505	1.00	1.00	0.01505
F2	PEDAL RAISE FOOT AND CUT THREAD	0.00430	1.00	1.00	0.00430
M4P0	PULL GARMENT AWAY FROM NEEDLE	0.00860	1.00	1.00	0.00860
SUVE-CPS-FS	CUT "V" WITH SNIPS	0.04085	1.00	1.00	0.04085
SATS-WT-TSFCNK	TOPSTITCH JOIN OF FACING TO NECK, MATERNITY	1.64383	1.00	1.00	1.64383
M4G1	GRASP LH END OF NECKLINE	0.01075	2.00	1.00	0.02150
SUVE-FPS-FS	FOLD END OVER SIMPLE	0.02580	2.00	1.00	0.05160
SUVE-APN-SM	ALIGN END TO NEEDLE TO TACK	0.01505	2.00	1.00	0.03010

Company ATRC APPAREL TECH &amp; RESEARCH CENTER

Plant CAL POLY POMONACAL POLY POMONA

Part MMDU-TUNIC MATERNITY DRESS UNIFORM (TUNIC)

Component MMDU-TUNIC MATERNITY DRESS UNIFORM (TUNIC)

F2	PEDAL TO START SEW	0.00430	2.00	1.00	0.00860
SUVE-SBB-AA	SEW BACKTACK, BUTTON	0.01505	2.00	1.00	0.03010
SUVF-LSS-RED1N	Sew 1" REDUCED SPD,Singer 591 SN LS,500 RPM,normal	0.02445	2.00	1.00	0.04890
SUVE-SBB-AA	SEW BACKTACK, BUTTON	0.01505	2.00	1.00	0.03010
F2	PEDAL TO CUT THREAD AND LIFT FOOT	0.00430	2.00	1.00	0.00860
M3P0	PULL FROM UNDER NEEDLE	0.00645	2.00	1.00	0.01290
SUVE-FPS-SS	UNFOLD END	0.01935	2.00	1.00	0.03870
SUVE-RHP-AS	REGRASP END	0.01720	2.00	1.00	0.03440
SUVE-APN-FM	ALIGN END UNDER NEEDLE	0.02150	2.00	1.00	0.04300
F2	PEDAL TO START MACHINE	0.00430	2.00	1.00	0.00860
SUVE-SBB-AA	SEW BACKTACK, BUTTON	0.01505	2.00	1.00	0.03010
SUVE-RHP-AXS	REGRASP AND SPREAD SEAM 6X	0.01505	12.00	1.00	0.18060
F2	PEDAL TO START SEW 6X	0.00430	12.00	1.00	0.05160
SUVF-LSS-RED1N	Sew 1" REDUCED SPD,Singer 591 SN LS,500 RPM,normal	0.02445	12.00	1.00	0.29342
F2	PEDAL TO RAISE FOOT	0.00430	2.00	1.00	0.00860
M4P0	PULL FROM UNDER FOOT	0.00860	2.00	1.00	0.01720
J2	WIGGLE FABRIC FROM UNDER FOOT	0.00430	4.00	1.00	0.01720
SUVE-RHP-AM	REGRASP GARMENT	0.01935	2.00	1.00	0.03870
M4P0	INSERT HAND INTO FACING	0.00860	2.00	1.00	0.01720
M3G0 M3P0	LH GRASP END AND PUSH INTO RH INSERTED INTO	0.01290	2.00	1.00	0.02580
SUVE-RHP-AM	LH REGRASP GARMENT	0.01935	2.00	1.00	0.03870
M4P0	RH PULL RIGHTSIDE OUT	0.00860	2.00	1.00	0.01720
M2G1 M2P0	GRASP AND PULL ZIPPER END STRAIGHT	0.01075	2.00	1.00	0.02150
SUVE-RHP-AM	REGRASP FACING NEAR "V"	0.01935	1.00	1.00	0.01935
SUVE-RHP-AM	LH REGRASP FACING	0.01935	1.00	1.00	0.01935
J2	REGRASP SEAM TO PULL FLAT	0.00430	1.00	1.00	0.00430
M4P2	GUIDE FACING UNDER NEEDLE	0.01290	1.00	1.00	0.01290
SUVE-APN-FS	ALIGN UNDER NEEDLE	0.01935	1.00	1.00	0.01935
F2	DROP PRESSER FOOT	0.00430	1.00	1.00	0.00430
SUVE-SBB-AA	SEW BACKTACK, BUTTON	0.01505	1.00	1.00	0.01505

Company ATRC APPAREL TECH &amp; RESEARCH CENTER

Plant CAL POLY POMONA CAL POLY POMONA

Part MMDU-TUNIC MATERNITY DRESS UNIFORM (TUNIC)

Component MMDU-TUNIC MATERNITY DRESS UNIFORM (TUNIC)

SUVE-RHP-AS	REGRASP AND SPREAD SEAM 3X	0.01720	3.00	1.00	0.05160
F2	PEDAL START MACHINE 3X	0.00430	3.00	1.00	0.01290
SUVF-LSS-RED3N	Sew 3" REDUCED SPD, Singer 591 SN LS, 1000	0.03345	2.00	1.00	0.06690
SUVF-LSS-RED1E	Sew 1" REDUCED SPD, Singer 591 SN LS, 500	0.02875	1.00	1.00	0.02875
F2	PEDAL TO LIFT PRESSER FOOT	0.00430	1.00	1.00	0.00430
SUVE-RPR-FM	ROTATE GARMENT AROUND NEEDLE AT "V"	0.02580	1.00	1.00	0.02580
SUVE-RHP-AS	REGRASP ASSY	0.01720	1.00	1.00	0.01720
F2	PEDAL DROP PRESSER FOOT	0.00430	1.00	1.00	0.00430
SUVF-LSS-RED1N	Sew 1" REDUCED SPD, Singer 591 SN LS, 500 RPM, normal	0.02445	1.00	1.00	0.02445
SUVE-RHP-AS	REGRASP AND SPREAD SEAM 2X	0.01720	2.00	1.00	0.03440
F2	PEDAL START MACHINE 2X	0.00430	2.00	1.00	0.00860
SUVF-LSS-RED3N	Sew 3" REDUCED SPD, Singer 591 SN LS, 1000	0.03345	2.00	1.00	0.06690
SUVF-LSS-RED1N	Sew 1" REDUCED SPD, Singer 591 SN LS, 500 RPM, normal	0.02445	1.00	1.00	0.02445
SUVE-SBB-AA	SEW BACKTACK, BUTTON	0.01505	1.00	1.00	0.01505
F2	PEDAL RAISE FOOT AND CUT THREAD	0.00430	1.00	1.00	0.00430
M4P0	PULL GARMENT AWAY FROM NEEDLE	0.00860	1.00	1.00	0.00860
M4G3	GRASP ZIPPER	0.01505	1.00	1.00	0.01505
M5P0	ZIP ZIPPER	0.01075	1.00	1.00	0.01075
SATO-WT-TSZIPT	TOPSTITCH TOP OF ZIPPER, MATERNITY TUNIC	0.75491	1.00	1.00	0.75491
SATS-WT-TSZIPT	TOPSTITCH TOP OF ZIPPER, MATERNITY TUNIC	0.75491	1.00	1.00	0.75491
E4	E2 *2 TO INSPECT ZIPPER	0.00860	2.00	1.00	0.01720
M3P0	UNZIP ZIPPER PARTIALLY	0.00645	2.00	1.00	0.01290
SUVE-RHP-AM	REGRASP AT LHS ZIPPER FACING	0.01935	2.00	1.00	0.03870
SUVE-FPP-SA	PINCHFOLD FACING BACK AT ZIPPER	0.01075	2.00	1.00	0.02150
SUVE-APP-SS	ALIGN FOLDED FACING TO ZIPPER	0.01935	2.00	1.00	0.03870
M4G3 M4P2	GRASP STRAIGHT PIN AND PSN TO FACING	0.02795	2.00	1.00	0.05590
M2P2	PIN BACK THROUGH TOP LAYER	0.00860	2.00	1.00	0.01720
SUVE-RHP-AS	REGASP ASSY	0.01720	2.00	1.00	0.03440
SUVE-APT-NL	ALIGN ASSY TO TABLETOP	0.01075	2.00	1.00	0.02150
SUVE-RHP-AS	REGRASP ASSY	0.01720	2.00	1.00	0.03440

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Plant CAL POLY POMONACAL POLY POMONA

Part MMDU-TUNIC MATERNITY DRESS UNIFORM (TUNIC)

Component MMDU-TUNIC MATERNITY DRESS UNIFORM (TUNIC)

SUVE-APN-FS	ALIGN ASSY UNDER NEEDLE	0.01935	2.00	1.00	0.03870
F2	DROP PRESSER FOOT	0.00430	2.00	1.00	0.00860
SUVE-SBB-AA	SEW BACKTACK, BUTTON	0.01505	2.00	1.00	0.03010
F2	PEDAL START MACHINE	0.00430	2.00	1.00	0.00860
SUVF-LSS-2N	Sew 2", Singer 591 Single Ndl Lockstitch, 2000 RPM, normal	0.01545	2.00	1.00	0.03090
M2G3 M2P0	REMOVE STRAIGHT PIN	0.01505	2.00	1.00	0.03010
M4P2	ASIDE STRAIGHT PIN TO CUSHION	0.01290	2.00	1.00	0.02580
SUVE-RHP-AM	REGRASP ASSY	0.01935	2.00	1.00	0.03870
F2	PEDAL TO START MACHINE	0.00430	2.00	1.00	0.00860
SUVF-LSS-RED1E	Sew 1" REDUCED SPD, Singer 591 SN LS, 500	0.02875	2.00	1.00	0.05751
SUVE-SBB-AA	SEW BACKTACK, BUTTON	0.01505	2.00	1.00	0.03010
F2	PEDAL TO RAISE PRESSER FOOT AND CUT THREAD	0.00430	2.00	1.00	0.00860
M3P0	PULL FROM UNDER PRESSER FOOT	0.00645	2.00	1.00	0.01290
SUVE-CPS-SA	CUT THREAD	0.03440	2.00	1.00	0.06880
SUVE-CPX-SA	CUT 2ND THREAD	0.01075	2.00	1.00	0.02150
M4G3 M3P0	ZIP ZIPPER	0.02150	2.00	1.00	0.04300
SATO-WT-SETLBL	SET LABEL, MATERNITY TUNIC	0.21100	1.00	1.00	0.21100
SATS-WT-SETLBL	SET LABEL, MATERNITY TUNIC	0.21100	1.00	1.00	0.21100
SUVE-RHP-AM	REGRASP FACING AT LHS ZIPPER	0.01935	1.00	1.00	0.01935
SUVE-APN-FL	ALIGN FACING UNDER NEEDLE	0.02365	1.00	1.00	0.02365
SUVE-OLB-SA	Obtain label from box or roll at right table top	0.02795	1.00	1.00	0.02795
F2	DROP PRESSER FOOT	0.00430	1.00	1.00	0.00430
SUVE-SBB-AA	SEW BACKTACK, BUTTON	0.01505	1.00	1.00	0.01505
M4G1 M4P0	PUSH BODY OF GARMENT BACK ONTO TABLE	0.01935	1.00	1.00	0.01935
SUVE-RHP-AM	REGRASP ASSY	0.01935	1.00	1.00	0.01935
SUVF-LSS-1.5E	Sew 1.5", Singer 591 SGL Ndl Lockstitch, 2000 RPM, exact	0.01750	1.00	1.00	0.01750
SUVE-SBB-AA	SEW BACKTACK, BUTTON	0.01505	1.00	1.00	0.01505
F2	PEDAL TO CUT THREADS AND LIFT PRESSER FOOT	0.00430	1.00	1.00	0.00430
SUVE-CPS-SA	CUT THREAD WITH SNIPS	0.03440	1.00	1.00	0.03440
SUVE-CPX-SA	CUT 2ND THREAD	0.01075	1.00	1.00	0.01075



## Company ATRC APPAREL TECH &amp; RESEARCH CENTER

Plant CAL POLY POMONACAL POLY POMONA

Part MMDU-TUNIC MATERNITY DRESS UNIFORM (TUNIC)

Component MMDU-TUNIC MATERNITY DRESS UNIFORM (TUNIC)

SATO-WT-JNSDSM	JOIN SIDESEAM, MATERNITY TUNIC	1.27478	1.00	1.00	1.27478
SATS-WT-JNSDSM	JOIN SIDESEAMS, MATERNITY TUNIC	1.27478	1.00	1.00	1.27478
SUVE-APT-SL	LAY GARMENT OUT TO TABLE	0.01505	1.00	1.00	0.01505
M4G1 M3P0	GRASP ARMHOLES AND PULL OUT WRINKLES	0.01720	1.00	1.00	0.01720
M2G1 M2P0	PULL OUT WRINKLES	0.01075	1.00	1.00	0.01075
SUVE-CPS-SA	CUT LOOSE THREAD	0.03440	1.00	1.00	0.03440
SATM-WT-JNSDSM1	JOIN 1 SIDESEAM, MATERNITY TUNIC	0.57181	1.00	1.00	0.57181
M4P0	PULL GARMENT BACK TO FRONT OF TABLE	0.00860	1.00	1.00	0.00860
M4G3 M5P0	FLIP GARMENT OVER TO OPPOSITE SIDE	0.02580	1.00	1.00	0.02580
SUVE-CPX-SA	CUT THREAD WITH SNIPS	0.01075	1.00	1.00	0.01075
SATM-WT-JNSDSM1	JOIN 1 SIDESEAM, MATERNITY TUNIC	0.57181	1.00	1.00	0.57181
M4P0	PULL BACK FROM BEHIND NEEDLE	0.00860	1.00	1.00	0.00860
SATO-WT-SETPKT	SET POCKET, MATERNITY TUNIC	1.80132	1.00	1.00	1.80132
SATS-WT-SETPKT	LOCKSTITCH SET POCKET, MATERNITY TUNIC	1.80132	1.00	1.00	1.80132
SATM-WT-TKPKT	TACK 1 POCKET	0.15305	2.00	1.00	0.30611
SATM-WT-CLPPKT	CLIP POCKET, MATERNITY TUNIC	0.11180	2.00	1.00	0.22360
SATM-WT-SETPKT	SET 1 POCKET TO SIDESEAM	0.63581	2.00	1.00	1.27162
SATO-WT-CLSIDES	OVERLOCK CLEAN SIDES, MATERNITY TUNIC	1.36080	1.00	1.00	1.36080
BATS-WT-CLSIDES	OVERLOCK CLEAN SIDE, MATERNITY TUNIC	0.04300	1.00	1.00	0.04300
W5	STEP TO MACHINE #2	0.01075	4.00	1.00	0.04300
SATS-WT-CLSIDES	OVERLOCK CLEAN SIDES, MATERNITY TUNIC	1.31780	1.00	1.00	1.31780
SUVE-APT-NL	LAY GARMENT TO MACHINE TABLETOP	0.01075	1.00	1.00	0.01075
SUVE-RHP-AL	REGRAASP SIDESEAM AT TOP	0.02150	1.00	1.00	0.02150
SUVE-APN-SL	ALIGN END OF SIDESEAM TO PRESSERFOOT	0.01720	1.00	1.00	0.01720
SATM-WT-CL25	OVERLOCK CLEAN 25 INCH SIDE	0.23338	1.00	1.00	0.23338
SUVE-RHP-AL	REGRAASP GARMENT ON OPPOSITE SIDE	0.02150	1.00	1.00	0.02150
M5P2	TURN GARMENT OVER AND POSITION SEAM END	0.01505	1.00	1.00	0.01505
SUVE-RHP-AS	REGRAASP ON TOP END OF SEAM	0.01720	1.00	1.00	0.01720
SUVE-APN-SM	ALIGN END OF SEAM TO NEEDLE	0.01505	1.00	1.00	0.01505
SATM-WT-CL25	OVERLOCK CLEAN 25 INCH SIDE	0.23338	1.00	1.00	0.23338

Company ATRC APPAREL TECH &amp; RESEARCH CENTER

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Part MMDU-TUNIC MATERNITY DRESS UNIFORM (TUNIC)

Component MMDU-TUNIC MATERNITY DRESS UNIFORM (TUNIC)

SUVE-RHP-AL	REGRASP BOTTOM OF SEAM ON OPPOSITE SIDE OF	0.02150	1.00	0.02150
M5P0	TURN GARMENT OVER AND POSITION END OF SEAM	0.01075	1.00	0.01075
SUVE-RHP-AS	REGRASP SEAM END	0.01720	1.00	0.01720
SUVE-APN-SM	ALIGN END OF SEAM TO NEEDLE	0.01505	1.00	0.01505
SATM-WT-CL25	OVERLOCK CLEAN 25 INCH SIDE	0.23338	1.00	0.23338
SUVE-RPR-FM	ROTATE END OF SEAM AROUND PRESSER FOOT	0.02580	1.00	0.02580
F2	PEDAL START MACHINE & CLEAN FACING AT	0.00430	1.00	0.00430
SUVF-OL-3N	Sew 3", US39500 OVERLOCK, 3250 RPM, NORMAL stop	0.01476	1.00	0.01476
SUVE-CTS-AA	CUT THREAD WITH PALMED SNIPS	0.01290	1.00	0.01290
SUVE-CPX-SA	CUT 2ND THREAD	0.01075	1.00	0.01075
SUVE-RHP-AL	REGRASP BOTTOM OF SIDESEAM ON OPPOSITE SIDE	0.02150	1.00	0.02150
M5P0	TURN PART OVER AND PLACE NEAR NEEDLE	0.01075	1.00	0.01075
SUVE-RHP-AS	REGRASP SEAM	0.01720	1.00	0.01720
SUVE-APN-SM	ALIGN SEAM TO NEEDLE	0.01505	1.00	0.01505
SATM-WT-CL25	OVERLOCK CLEAN 25 INCH SIDE	0.23338	1.00	0.23338
SUVE-RPR-FM	ROTATE END OF SEAM AROUND PRESSER FOOT	0.02580	1.00	0.02580
F2	PEDAL START MACHINE	0.00430	1.00	0.00430
SUVF-OL-3N	Sew 3", US39500 OVERLOCK, 3250 RPM, NORMAL stop	0.01476	1.00	0.01476
SUVE-CTS-AA	CUT THREAD WITH PALMED SNIPS	0.01290	1.00	0.01290
SUVE-CPX-SA	CUT 2ND THREAD	0.01075	1.00	0.01075
SATO-WT-TKAH	TACK ARMHOLE, MATERNITY TUNIC	0.56490	1.00	0.56490
BATS-WT-TKAH	HANDLING, TACK ARMHOLE, MATERNITY TUNIC	0.04300	1.00	0.04300
W5	STEP TO LOCKSTITCH MACHINE #4	0.01075	1.00	0.04300
SATS-WT-TKAH	TACK ARMHOLE, MATERNITY TUNIC	0.52190	1.00	0.52190
M5G1 M5P0	TURN TUNIC INSIDE OUT	0.02365	1.00	0.02365
M4G1 M4P0	STRAIGHTEN FABRIC	0.01935	1.00	0.01935
SATM-WT-TKAH	TACK 2 ARMHOLES, MATERNITY TUNIC	0.23945	2.00	0.47890
SATO-WT-JNBIAS	JOIN BIAS TO BOTTOM, MDU TUNIC	1.75602	1.00	1.75602
BATS-WT-BIAS	HANDLING-JOIN BIAS TAPE TO TUNIC BOTTOM	0.83000	1.00	0.83000
465 MODS	TIME TO SET M/C UP TO JOIN BIAS TAPE	1.00000	1.00	0.83000
		0.83		

Company ATRC APPAREL TECH &amp; RESEARCH CENTER

Plant CAL POLY POMONACAL POLY POMONA

Part MMDU-TUNIC MATERNITY DRESS UNIFORM (TUNIC)

Component MMDU-TUNIC MATERNITY DRESS UNIFORM (TUNIC)

SATS-WT-JNBIAS	JOIN BIAS TO MARINE MATERNITY TUNIC BOTTOM	0.92602	1.00	1.00	0.92602
SUVE-OOO-NL	OBTAIN TUNIC FROM LHS TABLE	0.02795	1.00	1.00	0.02795
SUVE-RHP-AM	REGRASP AT BOTTOM	0.01935	1.00	1.00	0.01935
SUVE-APT-SM	FLIP ONTO TABLETOP TO SPREAD OUT	0.01075	1.00	1.00	0.01075
SUVE-APN-SM	ALIGN BOTTOM UNDER PRESSER FOOT	0.01505	1.00	1.00	0.01505
F2	DROP PRESSER FOOT & START SEW (NOTE: Sew 10" RED SPD*, Singer 591 SGL Ndl LS, 2000	0.00430	7.00	1.00	0.03010
SUVF-LSS-RED10N	REGRASP TUNIC BOTTOM TO GUIDE NEXT 10" UNDER	0.05145	7.00	1.00	0.36016
SUVE-RHP-AM	PUSH FABRIC OUT OF WAY AND REGRASP NEAR	0.01935	7.00	1.00	0.13545
M4G1 M4P0	CUT BIAS TAPE WITH SCISSORS	0.01935	7.00	1.00	0.13545
SUVE-CPS-SA	GRASP CUT END OF BIAS TAPE	0.03440	1.00	1.00	0.03440
M4G3	FOLD UNDER CUT END OF BIAS TAPE	0.01505	1.00	1.00	0.01505
SUVE-FPS-SS	ALIGN FOLDED BIAS TAPE TO TUNIC BOTTOM	0.01935	1.00	1.00	0.01935
SUVE-APP-FS	PEDAL TO START SEW	0.02580	1.00	1.00	0.02580
F2	Sew 1", Singer 591 Single Ndl Lockstitch, 2000 RPM, exact	0.00430	1.00	1.00	0.00430
SUVF-LSS-1E	ROTATE EDGE AROUND NEEDLE 90 DEGREES	0.01525	1.00	1.00	0.01525
SUVE-RPR-SM	PEDAL TO START SEW	0.01935	1.00	1.00	0.01935
F2	Sew 1", Singer 591 Single Ndl Lockstitch, 2000 RPM, exact	0.00430	1.00	1.00	0.00430
SUVF-LSS-1E	SEW BACKTACK, LEVER	0.01525	1.00	1.00	0.01525
SUVE-SBL-AA	PEDAL TO LIFT PRESSER FOOT & CUT THREAD	0.02150	1.00	1.00	0.02150
F2	CUT THREAD WITH PALMED SNIPS	0.00430	1.00	1.00	0.00430
SUVE-CTS-AA	CUT THREAD WITH PALMED SNIPS	0.01290	1.00	1.00	0.01290
SATO-WT-HEM	BLIND HEM, MATERNITY TUNIC	1.17725	1.00	1.00	1.17725
BATS-WT-HEM	HANDLING-HEM BOTTOM, MATERNITY TUNIC	0.08600	1.00	1.00	0.08600
W5	WALK TO M/C#8	0.01075	8.00	1.00	0.08600
SATS-WT-HEM	BLIND HEM, MATERNITY TUNIC	1.09125	1.00	1.00	1.09125
M4G1 M4P0	REGRASP BY SLIDING HANDS AROUND BTM UNDER	0.01935	2.00	1.00	0.03870
SUVE-APF-FL	ALIGN TUNIC BOTTOM TO FOLDER ON BLINDSTICH	0.03010	1.00	1.00	0.03010
F2	PEDAL TO SEW ON	0.00430	1.00	1.00	0.00430
SUVE-APS-FM	ALIGN HEM BY SLIDING RH DOWN APPROX. 7"	0.02580	10.00	1.00	0.25800
SUVE-RHP-AM	LH REGRASP BODY OF SKIRT	0.01935	10.00	1.00	0.19350

## Company ATRC APPAREL TECH &amp; RESEARCH CENTER

Plant CAL POLY POMONACAL POLY POMONA

Part MMDU-TUNIC MATERNITY DRESS UNIFORM (TUNIC)

Component MMDU-TUNIC MATERNITY DRESS UNIFORM (TUNIC)

M4P0	LH MOVE BODY OF SKIRT AROUND M/C AID	0.00860	10.00	1.00	0.08600
F2	PEDAL TO START M/C (NOTE: REDUCED M/C SPEED)	0.00430	10.00	1.00	0.04300
SUVE-CHU-7NRED	Sew 7" REDUCE SPD, US56300 SN chainst, 1770	0.04204	10.00	1.00	0.42045
F2	PEDAL TO RELEASE HEM FROM UNDER NEEDLE	0.00430	1.00	1.00	0.00430
SUVE-CTS-AA	CUT THREAD WITH PALMED SNIPS	0.01290	1.00	1.00	0.01290
SATO-WT-TKPKT	BAR TACK POCKET, MATERNITY TUNIC	0.65925	1.00	1.00	0.65925
BATS-WT-TKPKT	HANDLING, BAR TACK POCKET, MATERNITY TUNIC	0.06450	1.00	1.00	0.06450
W5	STEP TO BAR TACK MACHINE #7	0.01075	6.00	1.00	0.06450
SATS-WT-TKPKT	BAR TACK POCKETS, MATERNITY TUNIC	0.59475	1.00	1.00	0.59475
M5G1 M5P0	REACH IN AND TURN GARMENT RIGHTSIDE OUT	0.02365	1.00	1.00	0.02365
M4G1 M4P0	STRAIGHTEN FABRIC	0.01935	3.00	1.00	0.05805
J2	REGASP SIDESEAM IN HANDS 5X TO GATHER	0.00430	10.00	1.00	0.04300
SATM-WT-BRTKPKT	BAR TACK BOTTOM OF LHS POCKET, MATERNITY	0.09870	2.00	1.00	0.19740
SATM-WT-BRTKPKT	BAR TACK TOP OF RHS POCKET, MATERNITY TUNIC	0.09870	2.00	1.00	0.19740
M4P0	PULL GARMENT FROM MACHINE	0.00860	2.00	1.00	0.01720
M4G1 M4P0	REGASP GARMENT 3X TO OBTAIN RHS SIDESEAM	0.01935	3.00	1.00	0.05805
FATO-WT-PRESS	PRESS, MATERNITY TUNIC	0.48445	1.00	1.00	0.48445
BATS-WT-PRESS	HANDLING-PRESS MATERNITY TUNIC	0.07525	1.00	1.00	0.07525
W5	STEP FROM S/N M/C#7 TO IRONING BOARD	0.01075	7.00	1.00	0.07525
FATS-WT-PRSHFC	PRESS OPEN SHOULDER SEAMS OF FACING	0.40920	1.00	1.00	0.40920
FATO-WT-FOLDBAG	INSPECT, TRIM, FOLD, BAG, TUNIC	0.38485	1.00	1.00	0.38485
BATS-WT-BAG	HANDLING, FOLD & BAG MARINE MATERNITY TUNIC	0.03225	1.00	1.00	0.03225
W5	STEP TO FOLDING TABLE	0.01075	3.00	1.00	0.03225
FATS-WT-INSFLD	INSPECT, TRIM, FOLD, MARINE MATERNITY TUNIC	0.22145	1.00	1.00	0.22145
SUVE-APT-SL	LAY TUNIC FLAT TO TABLE	0.01505	1.00	1.00	0.01505
M4G3 M3P0	GRASP BACK PLY AND LIFT	0.02150	1.00	1.00	0.02150
M2G3 M2P2	GRASP 1ST FRONT PLEAT AND PULL TO ALIGN	0.01935	1.00	1.00	0.01935
M2G3 M2P2	GRASP 2ND FRONT PLEAT AND PULL TO ALIGN	0.01935	1.00	1.00	0.01935
M3P2	LOWER BACK PANEL TO ALIGN	0.01075	1.00	1.00	0.01075
M4G1 M2P0	GRASP AT SIDESEAMS AND STRAIGHTEN	0.01505	1.00	1.00	0.01505

Company ATRC APPAREL TECH &amp; RESEARCH CENTER

Plant CAL POLY POMONACAL POLY POMONA

Part MMDU-TUNIC MATERNITY DRESS UNIFORM (TUNIC)

Component MMDU-TUNIC MATERNITY DRESS UNIFORM (TUNIC)

SUVE-FPS-SL	FOLD LHS TUNIC TOWARD CENTER	1.00	0.02795	1.00	0.02795
SUVE-FPS-SL	FOLD RHS TUNIC TOWARD CENTER	1.00	0.02795	1.00	0.02795
M4P0	ROTATE TUNIC 90 DEGREES	1.00	0.00860	1.00	0.00860
SUVE-FPS-SL	FOLD BOTTOM END OF TUNIC APPROX. 3"	1.00	0.02795	1.00	0.02795
SUVE-FPS-SL	FOLD BOTTOM OF TUNIC OVER TO TOP	1.00	0.02795	1.00	0.02795
SATS-WS-BAGSTKR	BAG GARMENT ADD STICKER BAG	1.00	0.13115	1.00	0.13115
M4G3 M4P0	GRASP BAG & LAY TO TABLE	1.00	0.02365	1.00	0.02365
FUVM-BGM	Bag folded garment manual	1.00	0.07310	1.00	0.07310
SUVE-OSR-AA	Obtain sticker from roll and position to part	1.00	0.03440	1.00	0.03440

# Part Routing Report

Company	ATRC	APPAREL TECH & RESEARCH CENTER									
Plant	CAL POLY POMONACAL POLY POMONA										
Part	MMDU-SKIRT	MARINE MATERNITY DRESS UNIFORM (SKIRT)									
Operation	Setup	Handle	Process	Normal	PF&D	Incentive	Standard	Cost			
CLOSE BACK SEAM & SEW 2 BACK PLEATS, MDU SI	0.000	.198	.782	1.605	22.0 %	10.0 %	2.119	\$0.23			
CLEAN 2 SIDES OF 2 BACK PIECES, MDU SKIRT	.083	0.000	.858	1.076	22.0 %	10.0 %	1.421	\$0.15			
CLEAN FRONT SIDES & RIB, MDU SKIRT	0.000	.088	.709	1.039	22.0 %	10.0 %	1.371	\$0.15			
INSPECT, TRIM, FOLD, BAG, SKIRT	0.000	.065	.131	.331	22.0 %	10.0 %	.437	\$0.05			
BLIND HEM MDU SKIRT	0.000	.086	.737	.823	22.0 %	10.0 %	1.087	\$0.12			
JOIN RIB TO FRONT PANEL, MDU SKIRT/SLACK	0.000	0.000	.747	.747	22.0 %	10.0 %	.986	\$0.11			
PRESS MDU SKIRT	0.000	.065	.812	.876	22.0 %	10.0 %	1.157	\$0.13			
CLEAN BOTTOM, MDU SKIRT	0.000	0.000	.739	.739	22.0 %	10.0 %	.975	\$0.11			
CLEAN WAIST & SET LABEL, MDU SKIRT	0.000	.032	.457	.489	22.0 %	10.0 %	.646	\$0.07			
CUT, TACK, SET ELASTIC, MDU SKIRT	0.000	.147	1.343	1.826	22.0 %	10.0 %	2.410	\$0.26			
JOIN BIAS TO BOTTOM SKIRT, MDU SKIRT	0.000	.830	.741	1.571	22.0 %	10.0 %	2.074	\$0.22			
JOIN SIDESEAM, SKIRT	0.000	.175	1.148	1.323	22.0 %	10.0 %	1.746	\$0.19			
TOPSTITCH RIB JOIN, MDU SKIRT/SLACKS	0.000	0.000	.365	.365	22.0 %	10.0 %	.481	\$0.05			
		.083	1.685	9.568	12.810		16.910	\$1.83			

Parts Per Minute

Parts Per 8 Hour Day

.059

28.386

# Part Workcenter Summary Report

Page 1

Company **ATRC** APPAREL TECH & RESEARCH CENTER  
Plant **CAL POLY POMONA** CAL POLY POMONA  
Part: **MMDU-SKIRT** MARINE MATERNITY DRESS UNIFORM (SKIRT)

Workcenter	Normal Minutes	PF & D Incentive	Std. Minutes	Cost
Material Group <b>FLORAL OR OTHER PATTERN</b>				<b>\$1.83</b>
Busy Bees #1	6.497	22.0 % 10.0 %	8.576	\$0.93
Busy Bees #2	6.313	22.0 % 10.0 %	8.333	\$0.90
Total Minutes	12.810		16.910	
Total Hours	.214		.282	<b>\$1.83</b>
Material Group <b>MARINE CORP KHAKI POLY/WOOL BLEND</b>				<b>\$1.83</b>
Busy Bees #1	6.497	22.0 % 10.0 %	8.576	\$0.93
Busy Bees #2	6.313	22.0 % 10.0 %	8.333	\$0.90
Total Minutes	12.810		16.910	
Total Hours	.214		.282	<b>\$1.83</b>
Material Group <b>SOLID FABRIC, NO ALIGNMENT</b>				<b>\$1.83</b>
Busy Bees #1	6.497	22.0 % 10.0 %	8.576	\$0.93
Busy Bees #2	6.313	22.0 % 10.0 %	8.333	\$0.90
Total Minutes	12.810		16.910	
Total Hours	.214		.282	<b>\$1.83</b>

# Part Operation Summary Report

Page 1

Company **ATRC** APPAREL TECH & RESEARCH CENTER  
 Plant **CAL POLY POMONA** CAL POLY POMONA  
 Part **MMDU-SKIRT** MARINE MATERNITY DRESS UNIFORM (SKIRT)

Workcenter/Operation	Normal Minutes	Std. Minutes	Cost
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Material Group **FLORAL OR OTHER PATTERN** **\$1.83**

**Busy Bees #1** PF&D 22.0% Incentive 10.0%

CLOSE BACK SEAM & SEW 2 BACK PLEATS, MDU SKIRT	1.605	2.119	\$0.23
CLEAN 2 SIDES OF 2 BACK PIECES, MDU SKIRT	1.076	1.421	\$0.15
CLEAN FRONT SIDES & RIB, MDU SKIRT	1.039	1.371	\$0.15
INSPECT, TRIM, FOLD, BAG, SKIRT	.331	.437	\$0.05
BLIND HEM MDU SKIRT	.823	1.087	\$0.12
JOIN RIB TO FRONT PANEL, MDU SKIRT/SLACK	.747	.986	\$0.11
PRESS MDU SKIRT	.876	1.157	\$0.13

**Busy Bees #2** PF&D 22.0% Incentive 10.0%

CLEAN BOTTOM, MDU SKIRT	.739	.975	\$0.11
CLEAN WAIST & SET LABEL, MDU SKIRT	.489	.646	\$0.07
CUT, TACK, SET ELASTIC, MDU SKIRT	1.826	2.410	\$0.26
JOIN BIAS TO BOTTOM SKIRT, MDU SKIRT	1.571	2.074	\$0.22
JOIN SIDESEAM, SKIRT	1.323	1.746	\$0.19
TOPSTITCH RIB JOIN, MDU SKIRT/SLACKS	.365	.481	\$0.05

Total Minutes	12.810	16.910	
Total Hours	.214	.282	<b>\$1.83</b>

Material Group **MARINE CORP KHAKI POLY/WOOL BLEND** **\$1.83**

**Busy Bees #1** PF&D 22.0% Incentive 10.0%

CLOSE BACK SEAM & SEW 2 BACK PLEATS, MDU SKIRT	1.605	2.119	\$0.23
CLEAN 2 SIDES OF 2 BACK PIECES, MDU SKIRT	1.076	1.421	\$0.15
CLEAN FRONT SIDES & RIB, MDU SKIRT	1.039	1.371	\$0.15
INSPECT, TRIM, FOLD, BAG, SKIRT	.331	.437	\$0.05
BLIND HEM MDU SKIRT	.823	1.087	\$0.12
JOIN RIB TO FRONT PANEL, MDU SKIRT/SLACK	.747	.986	\$0.11
PRESS MDU SKIRT	.876	1.157	\$0.13

**Busy Bees #2** PF&D 22.0% Incentive 10.0%

CLEAN BOTTOM, MDU SKIRT	.739	.975	\$0.11
CLEAN WAIST & SET LABEL, MDU SKIRT	.489	.646	\$0.07
CUT, TACK, SET ELASTIC, MDU SKIRT	1.826	2.410	\$0.26
JOIN BIAS TO BOTTOM SKIRT, MDU SKIRT	1.571	2.074	\$0.22
JOIN SIDESEAM, SKIRT	1.323	1.746	\$0.19
TOPSTITCH RIB JOIN, MDU SKIRT/SLACKS	.365	.481	\$0.05

Total Minutes	12.810	16.910	
Total Hours	.214	.282	<b>\$1.83</b>



Company **ATRC** APPAREL TECH & RESEARCH CENTER  
 Plant **CAL POLY POMONA** CAL POLY POMONA  
 Part **MMDU-SKIRT** MARINE MATERNITY DRESS UNIFORM (SKIRT)

Workcenter/Operation	Normal Minutes	Std. Minutes	Cost
<b>Material Group SOLID FABRIC, NO ALIGNMENT</b>			<b>\$1.83</b>
<b>Busy Bees #1 PF&amp;D 22.0% Incentive 10.0%</b>			
CLOSE BACK SEAM & SEW 2 BACK PLEATS, MDU SKIRT	1.605	2.119	\$0.23
CLEAN 2 SIDES OF 2 BACK PIECES, MDU SKIRT	1.076	1.421	\$0.15
CLEAN FRONT SIDES & RIB, MDU SKIRT	1.039	1.371	\$0.15
INSPECT, TRIM, FOLD, BAG, SKIRT	.331	.437	\$0.05
BLIND HEM MDU SKIRT	.823	1.087	\$0.12
JOIN RIB TO FRONT PANEL, MDU SKIRT/SLACK	.747	.986	\$0.11
PRESS MDU SKIRT	.876	1.157	\$0.13
<b>Busy Bees #2 PF&amp;D 22.0% Incentive 10.0%</b>			
CLEAN BOTTOM, MDU SKIRT	.739	.975	\$0.11
CLEAN WAIST & SET LABEL, MDU SKIRT	.489	.646	\$0.07
CUT, TACK, SET ELASTIC, MDU SKIRT	1.826	2.410	\$0.26
JOIN BIAS TO BOTTOM SKIRT, MDU SKIRT	1.571	2.074	\$0.22
JOIN SIDESEAM, SKIRT	1.323	1.746	\$0.19
TOPSTITCH RIB JOIN, MDU SKIRT/SLACKS	.365	.481	\$0.05
<b>Total Minutes</b>	<b>12.810</b>	<b>16.910</b>	
<b>Total Hours</b>	<b>.214</b>	<b>.282</b>	<b>\$1.83</b>

# Operator Report

Page 1

Company ATRC APPAREL TECH & RESEARCH CENTER  
 Plant CAL POLY POMONACAL POLY POMONA  
 Part MMDU-SKIRT MARINE MATERNITY DRESS UNIFORM (SKIRT)  
 Component MMDU-SKIRT MARINE MATERNITY DRESS UNIFORM (SKIRT)

Value  
 Standard  
 Standard Minutes  
 Standard Hours

Code	Description	Time	Freq.	Occur.	Ext. Time
SATO-WK-CLNBACK	CLEAN 2 SIDES OF 2 BACK PIECES, MDU SKIRT	1.07615	1.00	1.00	1.07615
MMSS-BPS-CB	MM Skirt - Bring (2) back parts to station for clean back	0.08278	1.00	1.00	0.08278
SUVE-000-NL	OBTAIN 1ST BACK PIECE FROM STACK	0.02795	1.00	1.00	0.02795
SUVE-000-NL	OBTAIN 2ND BACK PIECE FROM STACK	0.02795	1.00	1.00	0.02795
W5	TURN, WALK TO OLOCK MACHINE TABLE	0.01075	4.00	2.00	0.02150
M5P0	ASIDE STACK TO STATION	0.01075	1.00	2.00	0.00538
SATS-WSK-ASS BK	ASSEMBLE 2 PANELS & ATTACH W/STRAIGHT PIN	0.13545	1.00	1.00	0.13545
SUVE-000-NS	RH OBTAIN STRAIGHT PIN FROM RHS M/C	0.01935	1.00	1.00	0.01935
SUVE-00T-FL	OBTAIN 1ST PANEL FROM RHS M/C; PSN TO 2ND	0.04945	1.00	1.00	0.04945
SUVE-RHP-AS	LH REGRASP ASSEMBLY	0.01720	1.00	1.00	0.01720
M4P0	LIFT 2 PARTS TOGETHER FROM TABLETOP	0.00860	1.00	1.00	0.00860
SUVE-RHP-AM	LH REGRASP PART	0.01935	1.00	1.00	0.01935
M3P2	RH INSERT STRAIGHT PIN TO JOIN 2 PANELS	0.01075	2.00	1.00	0.02150
SATS-WSK-CLBK	OVERLOCK CLEAN 1 SIDE OF 1 PIECE	0.21448	4.00	1.00	0.85792
SUVE-APT-NM	ALIGN ASSEMBLY TO TABLE TOP	0.00860	1.00	2.00	0.00430
SUVE-FPS-NM	GRASP & FOLD TOP PLY HALFWAY BACK TO ACCESS	0.01935	1.00	2.00	0.00968
SUVE-RHP-AS	REPOSITION HANDS ON BOTTOM PLY	0.01720	1.00	2.00	0.00860
SUVE-APN-SM	ALIGN END OF BOTTOM PLY TO NEEDLE	0.01505	1.00	1.00	0.01505
F1	FOOT PEDAL TO START MACHINE & SEW ONTO EDGE	0.00215	1.00	1.00	0.00215
SUVF-OL-6N	Sew 6" US39500 OVERLOCK, 4550 RPM, NORMAL stop	0.01832	1.00	1.00	0.01832
SUVE-RHP-AS	REPOSITION BH ON PANEL 3 TIMES	0.01720	3.00	1.00	0.05160

## Company ATRC APPAREL TECH &amp; RESEARCH CENTER

## Plant CAL POLY POMONACAL POLY POMONA

## Part MMDU-SKIRT MARINE MATERNITY DRESS UNIFORM (SKIRT)

## Component MMDU-SKIRT MARINE MATERNITY DRESS UNIFORM (SKIRT)

F1	PEDAL START M/C (3 SEW BURST @ 9" EACH)	0.00215	3.00	1.00	0.00645
SUVE-OL-9N	Sew 9" US39500 OVERLOCK, 5200 RPM, NORMAL stop	0.02203	3.00	1.00	0.06609
SUVE-CTS-AA	CUT THREAD WITH PALMED SNIPS	0.01290	1.00	1.00	0.01290
M4P0	PULL PANEL BACK FROM BEHIND NEEDLE	0.00860	1.00	1.00	0.00860
SUVE-RHP-AL	GRASP EDGE OF FOLDED BACK TOP PANEL	0.02150	1.00	2.00	0.01075
SATO-WK-CLBKPL	CLOSE BACK SEAM & SEW 2 BACK PLEATS, MDU SKIRT	1.60509	1.00	1.00	1.60509
BATS-SKR-MC3	Re-obtain 2 back parts, walk to next station & align	0.19780	1.00	1.00	0.19780
SUVE-000-SL	OBTAIN BACK PANELS FROM M/C #2 TABLE	0.03225	1.00	1.00	0.03225
W5	STEP TO MACHINE #3	0.01075	3.00	1.00	0.03225
SUVE-APT-NL	LAY BACKS TO TABLE	0.01075	1.00	1.00	0.01075
W5	AFTER SEW PLEATS, STEP TO TABLE	0.01075	2.00	1.00	0.02150
SUVE-DPT-SL	ASIDE PLEATED BACK PANEL TO TABLE	0.01935	1.00	1.00	0.01935
W5	STEP TO STACK OF FRONT PANELS	0.01075	2.00	1.00	0.02150
SUVE-000-NL	OBTAIN FRONT PANEL FROM STACK	0.02795	1.00	1.00	0.02795
W5	STEP BACK TO M/C#3	0.01075	3.00	1.00	0.03225
SATS-WK-JNBK	JOIN BACK PIECES ON WOMEN'S MARINE SKIRT	0.62576	1.00	1.00	0.62576
SUVE-OTT-NM	OBTAIN 2 BACK PIECES FROM LEFT M/C TABLE	0.03870	1.00	1.00	0.03870
SUVE-APP-FS	ALIGN 2 BACK PANELS TOGETHER	0.02580	1.00	1.00	0.02580
SUVE-APN-SL	ALIGN ASSEMBLY UNDER PRESSER FOOT	0.01720	1.00	1.00	0.01720
F2	DROP PRESSER FOOT & START BACKTACK SEW	0.00430	1.00	1.00	0.00430
SUVE-SBL-AA	SEW BACKTACK, LEVER	0.02150	1.00	1.00	0.02150
SUVE-RHP-AS	REGRASP ASSY 8 TIMES	0.01720	8.00	1.00	0.13760
SUVE-APP-SS	MINOR ALIGN TOP PLY TO BOTTOM 7 TIMES	0.01935	7.00	1.00	0.13545
F2	PEDAL START SEW 7 TIMES	0.00430	7.00	1.00	0.03010
MMSM-JBPCS	JOIN BACK PIECES, 31.5" SEAM (SEW TIME)	0.14416	1.00	1.00	0.14416
SUVE-SBL-AA	SEW BACKTACK, LEVER	0.02150	1.00	1.00	0.02150
F2	PEDAL TO RAISE PRESSER FOOT	0.00430	1.00	1.00	0.00430
SUVE-CPX-SA	CUT PART with SCISSORS - SOME alignment care	0.03440	1.00	1.00	0.03440
SUVE-CPX-SA	MAKE 2ND THREAD CUT W/SNIPS	0.01075	1.00	1.00	0.01075
SATS-WK-MKPLT	MAKE 1 8" PLEAT ON BACK WOMEN'S MARINE	0.39076	2.00	1.00	0.78153

Company ATRC APPAREL TECH & RESEARCH CENTER

Plant CAL POLY POMONA CAL POLY POMONA

Part MMDU-SKIRT MARINE MATERNITY DRESS UNIFORM (SKIRT)

Component MMDU-SKIRT MARINE MATERNITY DRESS UNIFORM (SKIRT)

M4P0	PULL BACK PANEL BACK FROM BEHIND NEEDLE	0.00860	1.00	1.00	0.00860
SUVE-RHP-AM	REPOSITION HANDS TO TO AREA OF PLEAT	0.01935	1.00	1.00	0.01935
SUVE-FPP-FA	PINCHFOLD PLEAT ALIGNING NOTCHES	0.01720	1.00	1.00	0.01720
SUVE-APT-SL	LIFT AND LAY FOLDED PLEAT TO TABLE	0.01505	1.00	1.00	0.01505
J2	REPOSITION FINGERS ON FOLDED EDGE	0.00430	1.00	1.00	0.00430
SUVE-APN-SM	ALIGN END OF PLEAT TO FRONT OF PRESSER FOOT	0.01505	1.00	1.00	0.01505
J2	REMOVE FINGERS FROM UNDER PRESSER FOOT	0.00430	1.00	1.00	0.00430
SUVE-APP-FS	REALIGN TOP EDGES OF PLEAT	0.02580	1.00	1.00	0.02580
SUVE-APN-FS	ALIGN END OF PLEAT UNDER PRESSER FOOT	0.01935	1.00	1.00	0.01935
J2	REMOVE FINGERS FROM UNDER PRESSER FOOT	0.00430	1.00	1.00	0.00430
F2	DROP PRESSER FOOT	0.00430	1.00	1.00	0.00430
SUVE-SBL-AA	SEW BACKTACK, LEVER	0.02150	1.00	1.00	0.02150
SUVE-RHP-AM	REPOSITION RH FROM LEVER TO FOLDED PLEAT	0.01935	1.00	1.00	0.01935
M2P5	REALIGN BOTTOM OF PLEAT	0.01505	1.00	1.00	0.01505
SUVE-RHP-AS	REPOSITION LH TO HOLD CENTER OF FOLD	0.01720	1.00	1.00	0.01720
F1	PEDAL TO MAKE 7 SEW BURST	0.00215	7.00	1.00	0.01505
SUVE-LSS-1N	Sew 1", Singer 591 Single Ndl Lockstitch, 2000 RPM, normal	0.01095	7.00	1.00	0.07666
SUVE-LSS-1E	Sew 1", Singer 591 Single Ndl Lockstitch, 2000 RPM, exact	0.01525	1.00	1.00	0.01525
SUVE-SBL-AA	SEW BACKTACK, LEVER	0.02150	1.00	1.00	0.02150
SUVE-CPS-FS	CUT THREAD ON BOTTOM OF PLEAT WITH SNIPS	0.04085	1.00	1.00	0.04085
SUVE-CPX-SA	CUT THREAD ON TOP OF PLEAT	0.01075	1.00	1.00	0.01075
SATO-WK-JNRIB	JOIN RIB TO FRONT PANEL, MDU SKIRT/SLACK	0.74676	1.00	1.00	0.74676
SATS-WK-JNRIB	JOIN 25" RIB TO FRONT, MARINE MATERNITY	0.74676	1.00	1.00	0.74676
SUVE-RHP-AL	REPOSITION RH TO START CORNER OF FRONT PANEL	0.02150	1.00	1.00	0.02150
SUVE-OOO-NM	LH GRASP END OF RIB PANEL & LIFT FROM STACK	0.02365	1.00	1.00	0.02365
SUVE-APN-SL	ALIGN CORNER OF RIB UNDER NEEDLE	0.01720	1.00	1.00	0.01720
F2	PEDAL TO DROP PRESSER FOOT TO HOLD RIB	0.00430	1.00	1.00	0.00430
SUVE-RHP-AL	LH REGRAASP FRONT PANEL	0.02150	1.00	1.00	0.02150
SUVE-OOO-FS	GRASP CORNER OF RIB FROM UNDER PRESSER	0.03010	1.00	1.00	0.03010
SUVE-APP-FS	ALIGN CORNERS OF RIB AND FRONT PANEL	0.02580	1.00	1.00	0.02580

## Company ATRC APPAREL TECH &amp; RESEARCH CENTER

Plant CAL POLY POMONACAL POLY POMONA

Part MMDU-SKIRT MARINE MATERNITY DRESS UNIFORM (SKIRT)

Component MMDU-SKIRT MARINE MATERNITY DRESS UNIFORM (SKIRT)

SUVE-APN-FS	ALIGN ASSY UNDER NEEDLE	0.01935	1.00	0.01935
F2	PEDAL TO START SEW	0.00430	1.00	0.00430
SUVF-LSS-1N	Sew 1",Singer 591 Single Ndl Lockstitch,2000 RPM,norml	0.01095	1.00	0.01095
SUVE-RHP-AS	REGRASP FRONT PANEL APPROX. 4" FRONT START	0.01720	1.00	0.01720
SUVE-APP-SS	ALIGN FRONT PANEL TO RIB PANEL AT EDGE	0.01935	1.00	0.01935
F2	PEDAL TO START SEW	0.00430	1.00	0.00430
SUVF-LSS-3N	Sew 3",Singer 591 Single Ndl Lockstitch,2000 RPM,norml	0.01995	1.00	0.01995
SUVE-RHP-AM	REGRASP FRONT PANEL	0.01935	1.00	0.01935
M3P0	PULL FRONT PANEL TO LEFT TO MOVE EXCESS BULK	0.00645	1.00	0.00645
SUVE-RHP-AM	REGRASP FRONT PANEL NEAR CENTER	0.01935	1.00	0.01935
SUVE-APP-SS	ALIGN FRONT PANEL TO RIB NEAR CENTER	0.01935	1.00	0.01935
M4G1 M2P2	RH GRASP UNDER FRONT TO RIB & PULL TO ALIGN	0.01935	1.00	0.01935
SUVE-RHP-AS	LH REPOSITION HAND APPROX 4" IN FRONT OF	0.01720	1.00	0.05160
M1P2	MINOR ALIGN FRONT PANEL TO RIB (3X)	0.00645	1.00	0.01935
F2	PEDAL TO START SEW (3X)	0.00430	1.00	0.01290
SUVF-LSS-3N	Sew 3",Singer 591 Single Ndl Lockstitch,2000 RPM,norml	0.01995	1.00	0.05985
SUVE-RHP-AM	LH REGRASP FRONT PANEL AT END	0.01935	1.00	0.01935
M3G1	RH GRASP RIB PANEL AT END	0.00860	1.00	0.00860
SUVE-APP-FS	ALIGN ENDS OF FRONT PANEL AND RIB TOGETHER	0.02580	1.00	0.02580
M4G1 M2P2	RH GRASP UNDER FRONT TO RIB & PULL TO ALIGN	0.01935	1.00	0.01935
SUVE-RHP-AS	LH GRASP FRONT PANEL APPROX. 4" IN FRONT OF	0.01720	1.00	0.05160
M1P2	MINOR ALIGN FRONT PANEL TO RIB (3X)	0.00645	1.00	0.01935
F2	PEDAL TO START SEW (3X)	0.00430	1.00	0.01290
SUVF-LSS-3N	Sew 3",Singer 591 Single Ndl Lockstitch,2000 RPM,norml	0.01995	1.00	0.05985
J2	REGRASP CORNER OF ASSY TO MOVE FINGERS OUT	0.00430	1.00	0.00430
F2	PEDAL TO SEW	0.00430	1.00	0.00430
SUVF-LSS-3N	Sew 3",Singer 591 Single Ndl Lockstitch,2000 RPM,norml	0.01995	1.00	0.01995
SUVE-CPS-SA	CUT PART with SCISSORS - SOME alignment care	0.03440	1.00	0.03440
SATO-WK-CLRBFT	CLEAN FRONT SIDES & RIB, MDU SKIRT	1.03878	1.00	1.03878
BATS-SKR-MC2	BUNDLING- MARINE MATER SKIRT M/C#2, CLEAN FRT &	0.08815	1.00	0.08815

## Company ATRC APPAREL TECH &amp; RESEARCH CENTER

Plant CAL POLY POMONACAL POLY POMONA

Part MMDU-SKIRT MARINE MATERNITY DRESS UNIFORM (SKIRT)

Component MMDU-SKIRT MARINE MATERNITY DRESS UNIFORM (SKIRT)

W5	STEP TO MACHINE #2, REGRASP JN SEAM EN ROUTE	0.01075	3.00	1.00	0.03225
W5	WHEN COMPLETE, STEP TO M/C #4	0.01075	4.00	1.00	0.04300
M4P2	ASIDE SKIRT TO 2ND OPERATOR AT M/C#4	0.01290	1.00	1.00	0.01290
SATS-WK-CLNRBJN	CLEAN RIB JOIN ON MARINE MATER SKIRT/SLACK	0.24144	1.00	1.00	0.24144
SUVE-APT-SM	LAY FRONT PANEL TO M/C TABLE TO LEFT OF NEEDLE	0.01075	1.00	1.00	0.01075
SUVE-RHP-AM	REGRASP FRONT/RIB JOIN AT END	0.01935	1.00	1.00	0.01935
SUVE-APN-SS	ALIGN END OF RIB JOIN SEAM TO PRESSER FOOT	0.01290	1.00	1.00	0.01290
F2	PEDAL TO START SEW	0.00430	1.00	1.00	0.00430
SUVF-CHU-2N	Sew 2", US53600 single ndl chainstitch, 1770 RPM,normal	0.01662	1.00	1.00	0.01662
SUVE-RHP-AM	REPOSITION HAND ON SEAM TO GUIDE TO NEEDLE	0.01935	3.00	1.00	0.05805
F2	PEDAL START MACHINE (3X)	0.00430	3.00	1.00	0.01290
SUVF-CHU-7N	Sew 7", US56300 SN chainst, 3540 RPM,normal stop	0.02425	3.00	1.00	0.07274
J2	REGRASP TO MOVE FINGERS OUT OF WAY OF	0.00430	1.00	1.00	0.00430
SUVF-CHU-2N	Sew 2", US53600 single ndl chainstitch, 1770 RPM,normal	0.01662	1.00	1.00	0.01662
SUVE-CTS-AA	CUT THREAD WITH PALMED SNIPS	0.01290	1.00	1.00	0.01290
SATS-WK-CLFRSDS	CLEAN 32" FRONT SIDESEAM,1 SIDE, MARINE MATER	0.35460	2.00	1.00	0.70919
M4P0	PULL FRONT BACK FROM BEHIND NEEDLE	0.00860	1.00	1.00	0.00860
SUVE-RHP-AS	REGRASP FRONT PANEL AT SIDE BOTTOM	0.01720	1.00	1.00	0.01720
SUVE-APN-SM	ALIGN BOTTOM FRONT CORNER TO NEEDLE	0.01505	1.00	1.00	0.01505
F2	PEDAL TO SEW ON TO FRONT	0.00430	1.00	1.00	0.00430
SUVF-CHU-2N	Sew 2", US53600 single ndl chainstitch, 1770 RPM,normal	0.01662	1.00	1.00	0.01662
SUVE-RHP-AS	REGRASP FRONT PANEL (3X)	0.01720	3.00	1.00	0.05160
F2	PEDAL TO START SEW (3X)	0.00430	3.00	1.00	0.01290
SUVF-CHU-6N	Sew 6", US56300 single ndl chainstitch, 2950 RPM,normal	0.02476	3.00	1.00	0.07427
SUVE-RHP-AS	REGRASP FRONT AT RIB JOIN SEAM	0.01720	1.00	1.00	0.01720
SUVE-FPS-SS	FOLD RIB JOIN SEAM OVER, SIMPLE FOLD	0.01935	1.00	1.00	0.01935
F2	PEDAL TO START M/C (REDUCED SPEED NEXT 4"	0.00430	1.00	1.00	0.00430
SUVF-CHU-2N	Sew 2", US53600 single ndl chainstitch, 1770 RPM,normal	0.01662	2.00	1.00	0.03324
SUVE-RHP-AM	RH GRASP END OF RIB; RH GRASP APPROX. 6" FROM	0.01935	1.00	1.00	0.01935
F2	PEDAL START SEW	0.00430	1.00	1.00	0.00430

## Company ATRC APPAREL TECH &amp; RESEARCH CENTER

Plant CAL POLY POMONACAL POLY POMONA

Part MMDU-SKIRT MARINE MATERNITY DRESS UNIFORM (SKIRT)

Component MMDU-SKIRT MARINE MATERNITY DRESS UNIFORM (SKIRT)

SUVF-CHU-3N	Sew 3", US56300 single ndl chainstitch, 1770 RPM,normal	0.02171	2.00	1.00	0.04341
SUVE-CTS-AA	CUT THREAD WITH PALMED SNIPS	0.01290	1.00	1.00	0.01290
SATO-WK-TSRIB	TOPSTITCH RIB JOIN, MDU SKIRT/SLACKS	0.36461	1.00	1.00	0.36461
SATS-WK-TSRIBJN	TOPSTITCH 25" RIB JOIN, MARINE MATERNITY	0.36461	1.00	1.00	0.36461
SUVE-APN-FL	ALIGN RIB JOIN SEAM UNDER NEEDLE	0.02365	1.00	1.00	0.02365
M1P2	WIGGLE SEAM WITH FINGER LAY FLAT	0.00645	2.00	1.00	0.01290
SUVE-RNW-AA	REPOSITION NEEDLE USING HANDWHEEL	0.02365	1.00	1.00	0.02365
SUVE-RHP-AL	REPOSITION RH TO FRONT TO SPREAD SEAM FLAT	0.02150	1.00	1.00	0.02150
F2	PEDAL START M/C (6X)	0.00430	6.00	1.00	0.02580
SUVF-LSS-4N	Sew 4", Singer 591 Single Ndl Lockstitch,3000 RPM,normal	0.01845	6.00	1.00	0.11071
SUVE-RHP-AS	REPOSITION HANDS TO SPREAD SEAM (6X)	0.01720	6.00	1.00	0.10320
F2	PEDAL START MACHINE	0.00430	1.00	1.00	0.00430
SUVF-LSS-1N	Sew 1", Singer 591 Single Ndl Lockstitch,2000 RPM,normal	0.01095	1.00	1.00	0.01095
F2	PEDAL BACK TO CUT THREAD	0.00430	1.00	1.00	0.00430
SUVE-CTS-AA	CUT THREAD WITH PALMED SNIPS	0.01290	1.00	1.00	0.01290
SUVE-CPX-SA	CUT STARTING END LOOSE THREAD	0.01075	1.00	1.00	0.01075
SATO-WK-JNSIDES	JOIN SIDESEAM, SKIRT	1.32302	1.00	1.00	1.32302
BATS-SKR-MC4	BUNDLING- MARINE MATER SKIRT M/C#4	0.17470	1.00	1.00	0.17470
W5	STEP TO MACHINE #4	0.01075	3.00	1.00	0.03225
465 MODS	TIME TO ROTATE M/C PRESSER FOOT TO JOIN SIDES	1.00000	0.05	1.00	0.05000
W5	TURN & STEP TO TABLE	0.01075	3.00	1.00	0.03225
SUVE-OOO-NL	OBTAIN SKIRT BACK FROM TABLE	0.02795	1.00	1.00	0.02795
W5	TURN & STEP BACK TO M/C	0.01075	3.00	1.00	0.03225
SATS-WK-JNSIDE	JOIN 1 SIDE ON WOMEN'S MARINE SKIRT	0.57416	2.00	1.00	1.14832
SUVE-APP-FL	ALIGN LHS BACK PANEL TO FRONT	0.03010	1.00	1.00	0.03010
SUVE-APN-SL	ALIGN ASSEMBLY UNDER PRESSER FOOT	0.01720	1.00	1.00	0.01720
F2	DROP PRESSER FOOT & START BACKTACK SEW	0.00430	1.00	1.00	0.00430
SUVE-SBL-AA	SEW BACKTACK, LEVER	0.02150	1.00	1.00	0.02150
SATM-WK-JNSIDE	JOIN 1 SIDE MARINE MATERNITY SKIRT, 31.5" SEAM	0.43011	1.00	1.00	0.43011
SUVE-SBL-AA	SEW BACKTACK, LEVER	0.02150	1.00	1.00	0.02150

Company ATRC APPAREL TECH & RESEARCH CENTER  
 Plant CAL POLY POMONACAL POLY POMONA  
 Part MMDU-SKIRT MARINE MATERNITY DRESS UNIFORM (SKIRT)  
 Component MMDU-SKIRT MARINE MATERNITY DRESS UNIFORM (SKIRT)

F2	PEDAL TO RAISE PRESSER FOOT	0.00430	1.00	1.00	0.00430
SUVE-CPX-SA	CUT PART with SCISSORS - SOME alignment care	0.03440	1.00	1.00	0.03440
SUVE-CPX-SA	MAKE 2ND THREAD CUT W/ SNIPS	0.01075	1.00	1.00	0.01075
SATO-WK-CLWSTLB	CLEAN WAIST & SET LABEL, MDU SKIRT	0.48922	1.00	1.00	0.48922
BATS-SKR-MC5	BUNDLE/HANDLING-CLEAN WAIST-MACHINE #5	0.03225	1.00	1.00	0.03225
W5	STEP TO M/C #5, OVERLOCK; SIMO: TURN SKIRT	0.01075	3.00	1.00	0.03225
SATS-WK-CLWAIST	CLEAN WAIST & SET LABEL, MARINE MATERNITY	0.45697	1.00	1.00	0.45697
SUVE-RHP-AL	REGRAASP WAIST AT LHS SIDESEAM	0.02150	1.00	1.00	0.02150
SUVE-APN-FM	ALIGN WAIST UNDER PRESSER FOOT KEEPING SEAM	0.02150	1.00	1.00	0.02150
F2	PEDAL TO START SEW	0.00430	1.00	1.00	0.00430
SUVF-OL-3N	Sew 3",US39500 OVERLOCK, 3250 RPM, NORMAL stop	0.01476	1.00	1.00	0.01476
SUVE-RHP-AS	REGRAASP AT LHS PLEAT	0.01720	1.00	1.00	0.01720
SUVE-FPS-FS	FOLD PLEAT TO SEW DOWN	0.02580	1.00	1.00	0.02580
F2	PEDAL TO START SEW	0.00430	1.00	1.00	0.00430
SUVF-OL-3N	Sew 3",US39500 OVERLOCK, 3250 RPM, NORMAL stop	0.01476	1.00	1.00	0.01476
SUVE-RHP-AS	REGRAASP AT BACK PANEL JOIN SEAM	0.01720	1.00	1.00	0.01720
SUVE-RPS-AS	REPOSITION SEAM BY SMOOTHING FLAT	0.01075	1.00	1.00	0.01075
J2	LH REGRAASP TO HOLD SEAM DOWN	0.00430	1.00	1.00	0.00430
SUVE-OLB-SA	Obtain label from box or roll at right table top	0.02795	1.00	1.00	0.02795
SUVE-APP-SM	ALIGN LABEL TO CENTER BACK WAIST	0.02150	1.00	1.00	0.02150
F2	PEDAL TO START MACHINE	0.00430	1.00	1.00	0.00430
SUVF-OL-3N	Sew 3",US39500 OVERLOCK, 3250 RPM, NORMAL stop	0.01476	1.00	1.00	0.01476
SUVE-RHP-AS	REGRAASP RHS BACK PLEAT	0.01720	1.00	1.00	0.01720
SUVE-FPS-SS	FOLD RHS PLEAT OVER	0.01935	1.00	1.00	0.01935
F2	PEDAL TO START SEW	0.00430	1.00	1.00	0.00430
SUVF-OL-3N	Sew 3",US39500 OVERLOCK, 3250 RPM, NORMAL stop	0.01476	1.00	1.00	0.01476
SUVE-OL-3N	Sew 3",US39500 OVERLOCK, 3250 RPM, NORMAL stop	0.01476	1.00	1.00	0.01476
SUVE-RHP-AS	REGRAASP RHS SIDESEAM	0.01720	1.00	1.00	0.01720
SUVE-RPS-AS	SMOOTH RHS SIDESEAM FLAT	0.01075	1.00	1.00	0.01075
F2	PEDAL TO START MACHINE	0.00430	1.00	1.00	0.00430



## Company ATRC APPAREL TECH &amp; RESEARCH CENTER

Plant CAL POLY POMONACAL POLY POMONA

Part MMDU-SKIRT MARINE MATERNITY DRESS UNIFORM (SKIRT)

Component MMDU-SKIRT MARINE MATERNITY DRESS UNIFORM (SKIRT)

SUVF-OL-3N	Sew 3", US39500 OVERLOCK, 3250 RPM, NORMAL stop	0.01476	1.00	1.00	0.01476
SUVE-RHP-AM	REGRA SP WAIST AT CENTER FRONT (2X)	0.01935	1.00	1.00	0.03870
F2	PEDAL TO START MACHINE (2X)	0.00430	2.00	1.00	0.00860
SUVF-OL-9N	Sew 9", US39500 OVERLOCK, 5200 RPM, NORMAL stop	0.02203	2.00	1.00	0.04406
SUVF-OL-3N	Sew 3", US39500 OVERLOCK, 3250 RPM, NORMAL stop	0.01476	1.00	1.00	0.01476
SUVE-CTK-AA	CUT THREAD WITH UNDERTRIMMER	0.00860	1.00	1.00	0.00860
SATO-WK-CLNBTM	CLEAN BOTTOM, MDU SKIRT	0.73878	1.00	1.00	0.73878
SATS-WT-CLBTM	CLEAN BOTTOM, MATERNITY TUNIC	0.73878	1.00	1.00	0.73878
M4G1 M3P0	STRAIGHTEN TUNIC ON TABLETOP	0.01720	2.00	1.00	0.03440
SUVE-RHP-AL	REGRA SP TUNIC AT LHS BOTTOM SIDESEAM	0.02150	1.00	1.00	0.02150
SUVE-APT-NL	FLIP TUNIC AROUND TO ALIGN BOTTOM NEAR	0.01075	1.00	1.00	0.01075
SUVE-APN-SM	ALIGN LHS BOTTOM UNDER FOOT NEAR LHS	0.01505	1.00	1.00	0.01505
SUVE-RHP-AS	REGRA SP SIDESEAM	0.01720	1.00	1.00	0.01720
SUVE-RPS-AS	SMOOTH SIDESEAM FLAT	0.01075	1.00	1.00	0.01075
F2	PEDAL TO START SEW	0.00430	1.00	1.00	0.00430
SUVF-OL-3N	Sew 3", US39500 OVERLOCK, 3250 RPM, NORMAL stop	0.01476	1.00	1.00	0.01476
M5G1 M5P0	REACH INTO TUNIC AND TURN RIGHTSIDE OUT TO	0.02365	1.00	1.00	0.02365
SUVE-RHP-AM	REGRA SP TUNIC BOTTOM NEAR CENTER BACK SEAM	0.01935	1.00	1.00	0.01935
F2	PEDAL TO START SEW	0.00430	1.00	1.00	0.00430
SUVF-OL-9N	Sew 9", US39500 OVERLOCK, 5200 RPM, NORMAL stop	0.02203	1.00	1.00	0.02203
SUVE-RHP-AM	REGRA SP BOTTOM EDGE	0.01935	1.00	1.00	0.01935
F2	PEDAL START MACHINE	0.00430	1.00	1.00	0.00430
SUVF-OL-4N	Sew 4", US39500 OVERLOCK, 4550 RPM, NORMAL stop	0.01436	1.00	1.00	0.01436
SUVE-RHP-AS	REGRA SP AT BACK PANEL JOIN SEAM	0.01720	1.00	1.00	0.01720
SUVE-RPS-AS	REPOSITION SEAM BY SMOOTHING FLAT	0.01075	1.00	1.00	0.01075
F2	PEDAL TO START MACHINE	0.00430	1.00	1.00	0.00430
SUVF-OL-RED3N	Sew 3" REDUCED M/C SPD, US39500 OLOCK, 1300 RPM,	0.02722	1.00	1.00	0.02722
SUVE-RHP-AM	REGRA SP NEAR RHS SIDESEAM	0.01935	1.00	1.00	0.01935
F2	PEDAL START MACHINE	0.00430	1.00	1.00	0.00430
SUVF-OL-9N	Sew 9", US39500 OVERLOCK, 5200 RPM, NORMAL stop	0.02203	1.00	1.00	0.02203

## Company ATRC APPAREL TECH &amp; RESEARCH CENTER

Plant CAL POLY POMONACAL POLY POMONA

Part MMDU-SKIRT MARINE MATERNITY DRESS UNIFORM (SKIRT)

Component MMDU-SKIRT MARINE MATERNITY DRESS UNIFORM (SKIRT)

SUVE-RHP-AS	REGRASP RHS SIDSEAM	0.01720	1.00	0.01720
SUVE-RPS-AS	SMOOTH RHS SIDSEAM FLAT	0.01075	1.00	0.01075
F2	PEDAL TO START MACHINE	0.00430	1.00	0.00430
SUVF-OL-RED3N	Sew 3" REDUCED M/C SPD, US39500 OLOCK, 1300 RPM,	0.02722	1.00	0.02722
SUVE-RHP-AM	REGRASP AT FRONT (5X)	0.01935	1.00	0.09675
F2	PEDAL TO START MACHINE (5X)	0.00430	1.00	0.02150
M2G1 M1P0	GRASP FRONT PANEL JOIN SEAM AND FOLD OVER	0.00860	1.00	0.01720
SUVF-OL-8N	Sew 9", US39500 OVERLOCK, 5200 RPM, NORMAL stop	0.02203	1.00	0.06609
SUVF-OL-RED3N	Sew 8" REDUCED M/C SPD, US39500 OLOCK, 1300 RPM,	0.06184	1.00	0.12367
SUVE-CTS-AA	CUT THREAD WITH PALMED SNIPS	0.01290	1.00	0.01290
SATO-WK-ELASTIC	CUT, TACK, SET ELASTIC, MDU SKIRT	1.82609	1.00	1.82609
BATS-WS-ELASTIC	BUNDLING/HANDLINE, ELASTIC OPERATION	0.14730	1.00	0.14730
W5	STEP TO MACHINE	0.01075	1.00	0.03225
SUVE-DPT-NL	ASIDE GARMENT TO TABLE	0.01505	1.00	0.01505
405 MODS	TIME TO ROTATE PRESSER FOOT FOR TACK ELASTIC	1.00000	1.00	0.05000
405 MODS	TIME TO ROTATE PRESSER FOOT FOR SET ELASTIC	1.00000	1.00	0.05000
SATS-WK-CUTELAS	CUT 20" ELASTIC	0.10750	1.00	0.10750
M5G1 MSP0	GRASP ELASTIC AND PULL OUT FROM ROLL	0.02365	1.00	0.02365
SUVE-APT-FL	ALIGN RIGHT END ELASTIC TO TABLE GUIDE	0.02150	1.00	0.02150
M3P5	SLIDE LH TO TABLE GUIDE AT LOCATION OF CUT	0.01720	1.00	0.01720
J2	LH REGRASP AT LOCATION OF CUT	0.00430	1.00	0.00430
SUVE-CPSS-SA	CUT ELASTIC WITH SNIPS	0.03440	1.00	0.03440
SUVE-CPX-NA	XTRA CUT TO CUT THROUGH ELASTIC	0.00645	1.00	0.00645
SATS-WK-TKELAS	TACK ELASTIC	0.22871	1.00	0.22871
M4G1	RH GRASP END OF ELASTIC	0.01075	1.00	0.01075
SUVE-APP-FM	ALIGN ENDS OF ELASTIC TOGETHER	0.02795	1.00	0.02795
SUVE-APN-FM	ALIGN ASSY ENDS OF ELASTIC UNDER NEEDLE	0.02150	1.00	0.02150
F2	DROP PRESSER FOOT	0.00430	1.00	0.00430
SUVE-SBL-AA	SEW BACKTACK, LEVER	0.02150	1.00	0.02150
SUVF-LSS-1E	Sew 1", Singer 591 Single Ndi Lockstitch, 2000 RPM, exact	0.01525	1.00	0.01525

Company ATRC APPAREL TECH & RESEARCH CENTER

Plant CAL POLY POMONACA POLY POMONA

Part MMDU-SKIRT MARINE MATERNITY DRESS UNIFORM (SKIRT)

Component MMDU-SKIRT MARINE MATERNITY DRESS UNIFORM (SKIRT)

SUVE-RPR-SM	ROTATE 90 DEGREES AROUND NEEDLE	0.01935	1.00	1.00	0.01935
SUVF-LSS-1N	Sew 1",Singer 591 Single Ndl Lockstitch,2000 RPM,normal	0.01095	1.00	1.00	0.01095
SUVE-RPR-SM	ROTATE 90 DEGREES AROUND NEEDLE	0.01935	1.00	1.00	0.01935
SUVF-LSS-1E	Sew 1",Singer 591 Single Ndl Lockstitch, 2000 RPM,exact	0.01525	1.00	1.00	0.01525
SUVE-RPR-SM	ROTATE 90 DEGREES AROUND NEEDLE	0.01935	1.00	1.00	0.01935
SUVF-LSS-1N	Sew 1",Singer 591 Single Ndl Lockstitch,2000 RPM,normal	0.01095	1.00	1.00	0.01095
SUVE-SBL-AA	SEW BACKTACK, LEVER	0.02150	1.00	1.00	0.02150
F2	LIFT PRESSER FOOT	0.00430	1.00	1.00	0.00430
M3P0	PULL ELASTIC FROM UNDER PRESSER FOOT	0.00645	1.00	1.00	0.00645
SATS-WK-SETELAS	SET ELASTIC (36" STRETCHED) TO WAIST	1.34258	1.00	1.00	1.34258
M3G1 M3P2	GRASP WAISTLINE OF SKIRT AT TABLETOP; PSN TO	0.01935	1.00	1.00	0.01935
M3G1	GRASP ELASTIC IN OPPOSITE HAND	0.00860	1.00	1.00	0.00860
SUVE-APP-FS	ALIGN ELASTIC WAIST AT SEAM	0.02580	1.00	1.00	0.02580
SUVE-FPS-FS	SIMPLE FOLD TOP OF WAIST LINE DOWN OVER	0.02580	1.00	1.00	0.02580
J2	REGRASP ASSY	0.00430	1.00	1.00	0.00430
SUVE-APN-FM	ALIGN ASSY UNDER NEEDLE	0.02150	1.00	1.00	0.02150
SUVE-RPS-AS	SMOOTH FOLDED WAISTBAND	0.01075	1.00	1.00	0.01075
F2	DROP PRESSER FOOT TO START SEW	0.00430	1.00	1.00	0.00430
M4G3 M4P2	GRASP STRAIGHT PIN AND INSERT TO WAISTBAND	0.02795	2.00	1.00	0.05590
M2P2	PUSH PIN THROUGH TO HOLD IN PLACE (2X)	0.00860	2.00	1.00	0.01720
SUVF-LSS-1N	Sew 1",Singer 591 Single Ndl Lockstitch,2000 RPM,normal	0.01095	1.00	1.00	0.01095
SUVE-RHP-AS	BH REGRASP ELASTIC/WAISTBAND EVERY 4"	0.01720	9.00	1.00	0.15480
SUVE-APP-FS	ALIGN ELASTIC TO WAIST EVERY 4"	0.02580	9.00	1.00	0.23220
SUVE-FPS-FS	FOLD WAISTBAND OVER ELASTIC EVERY 4"	0.02580	9.00	1.00	0.23220
J2	RH REGRASP ASSY EVERY 4"	0.00430	9.00	1.00	0.03870
F2	PEDAL TO START SEW EVERY 4"(NOTE: REDUCED M/C	0.00430	9.00	1.00	0.03870
SUVF-LSS-2N	Sew 2",Singer 591 Single Ndl Lockstitch,2000 RPM,normal	0.01545	18.00	1.00	0.27813
M4G1 M3P0	GRASP BULK OF SKIRT AND ROTATE OUT OF WAY (3X)	0.01720	3.00	1.00	0.05160
SUVE-SBL-AA	SEW BACKTACK, LEVER	0.02150	1.00	1.00	0.02150
F2	PEDAL TO LIFT PRESSER FOOT	0.00430	1.00	1.00	0.00430

## Company ATRC APPAREL TECH &amp; RESEARCH CENTER

Plant CAL POLY POMONACAL POLY POMONA

Part MMDU-SKIRT MARINE MATERNITY DRESS UNIFORM (SKIRT)

Component MMDU-SKIRT MARINE MATERNITY DRESS UNIFORM (SKIRT)

M3P0	MOVE FROM UNDER NEEDLE	0.00645	1.00	1.00	0.00645
SUVE-CTS-AA	CUT THREAD WITH PALMED SNIPS	0.01290	1.00	1.00	0.01290
M3G1 M4P0	GRASP AND REMOVE STRAIGHT PIN FROM WAIST	0.01720	1.00	1.00	0.01720
M4G1	REGRASP WAIST	0.01075	1.00	1.00	0.01075
M3P0	PULL & RELEASE WAIST ELASTIC 3X TO DISTRIBUTE	0.00645	6.00	1.00	0.03870
SATO-WK-JNBIAS	JOIN BIAS TO BOTTOM SKIRT, MDU SKIRT	1.57123	1.00	1.00	1.57123
BATS-SKR-BIAS	HANDLING-JOIN BIAS TAPE TO SKIRT BOTTOM	0.83000	1.00	1.00	0.83000
465 MODS	TIME TO SET M/C UP TO JOIN BIAS TAPE	1.00000	0.83	1.00	0.83000
SATS-WK-JNBIAS	JOIN BIAS TO MARINE MATERNITY SKIRT BOTTOM	0.74123	1.00	1.00	0.74123
SUVE-000-NL	OBTAIN SKIRT FROM LHS TABLE	0.02795	1.00	1.00	0.02795
SUVE-RHP-AM	REGRASP SKIRT BOTTOM	0.01935	1.00	1.00	0.01935
SUVE-APT-SM	FLIP SKIRT ONTO TABLETOP TO SPREAD OUT	0.01075	1.00	1.00	0.01075
SUVE-APN-SM	ALIGN BOTTOM SKIRT UNDER PRESSER FOOT	0.01505	1.00	1.00	0.01505
F2	DROP PRESSER FOOT & START SEW (NOTE:	0.00430	7.00	1.00	0.03010
SUVE-LSS-3.5N	Sew 3.5", Singer 591 Single Ndl LStitch, 2000 RPM, normal	0.02220	14.00	1.00	0.31082
SUVE-RHP-AM	REGRASP SKIRT BOTTOM TO GUIDE NEXT 7" UNDER	0.01935	7.00	1.00	0.13545
SUVE-CPS-SA	CUT BIAS TAPE WITH SCISSORS	0.03440	1.00	1.00	0.03440
M4G3	GRASP CUT END OF BIAS TAPE	0.01505	1.00	1.00	0.01505
SUVE-FPS-SS	FOLD UNDER CUT END OF BIAS TAPE	0.01935	1.00	1.00	0.01935
SUVE-APP-FS	ALIGN FOLDED BIAS TAPE TO SKIRT BOTTOM	0.02580	1.00	1.00	0.02580
F2	PEDAL TO START SEW	0.00430	1.00	1.00	0.00430
SUVE-LSS-1E	Sew 1", Singer 591 Single Ndl Lockstitch, 2000 RPM, exact	0.01525	1.00	1.00	0.01525
SUVE-RPR-SM	ROTATE EDGE AROUND NEEDLE 90 DEGREES	0.01935	1.00	1.00	0.01935
F2	PEDAL TO START SEW	0.00430	1.00	1.00	0.00430
SUVE-LSS-1E	Sew 1", Singer 591 Single Ndl Lockstitch, 2000 RPM, exact	0.01525	1.00	1.00	0.01525
SUVE-SBL-AA	SEW BACKTACK, LEVER	0.02150	1.00	1.00	0.02150
F2	PEDAL TO LIFT PRESSER FOOT & CUT THREAD	0.00430	1.00	1.00	0.00430
SUVE-CTS-AA	CUT THREAD WITH PALMED SNIPS	0.01290	1.00	1.00	0.01290
SATO-WK-HEM	BLIND HEM MDU SKIRT	0.82321	1.00	1.00	0.82321
BATS-SKR-HEM	HANDLING-HEM BOTTOM MARINE MATERNITY SKIRT	0.08600	1.00	1.00	0.08600

Company ATRC APPAREL TECH & RESEARCH CENTER

Plant CAL POLY POMONACAL POLY POMONA

Part MMDU-SKIRT MARINE MATERNITY DRESS UNIFORM (SKIRT)

Component MMDU-SKIRT MARINE MATERNITY DRESS UNIFORM (SKIRT)

W5	WALK TO M/C#8	0.01075	8.00	1.00	0.08600
SATS-WK-HEM	BLIND HEM MARINE MATERNITY SKIRT	0.73721	1.00	1.00	0.73721
SUVE-APF-FL	ALIGN SKIRT BOTTOM TO FOLDER ON BLINDSTICH	0.03010	1.00	1.00	0.03010
F2	PEDAL TO SEW ON	0.00430	1.00	1.00	0.00430
SUVE-APS-FM	ALIGN HEM BY SLIDING RH DOWN APPROX. 7"	0.02580	7.00	1.00	0.18060
SUVE-RHP-AM	LH REGRASP BODY OF SKIRT	0.01935	7.00	1.00	0.13545
M3P0	LH MOVE BODY OF SKIRT AROUND M/C AID	0.00645	7.00	1.00	0.04515
F2	PEDAL TO START M/C (NOTE: REDUCED M/C SPEED)	0.00430	7.00	1.00	0.03010
SUVF-CHU-7NRED	Sew 7" REDUCE SPD, US56300 SN chainst, 1770	0.04204	7.00	1.00	0.29431
F2	PEDAL TO RELEASE HEM FROM UNDER NEEDLE	0.00430	1.00	1.00	0.00430
SUVE-CTS-AA	CUT THREAD WITH PALMED SNIPS	0.01290	1.00	1.00	0.01290
SATO-WK-PRESS	PRESS MDU SKIRT	0.87620	1.00	1.00	0.87620
BATS-SKR-PRESS	HANDLING-PRESS MARINE MATERNITY SKIRT	0.06450	1.00	1.00	0.06450
W5	WALK TO IRONING BOARD	0.01075	6.00	1.00	0.06450
SATS-WK-PRESS	PRESS MARINE MATERNITY SKIRT	0.81170	1.00	1.00	0.81170
M4P2	POSITION SKIRT BOTTOM TO END OF IRONING BOARD	0.01290	1.00	1.00	0.01290
M5P2	SLIDE SKIRT ONTO IRONING BOARD	0.01505	1.00	1.00	0.01505
M3P0	WIGGLE SKIRT STRAIGHT ONTO BOARD	0.00645	2.00	1.00	0.01290
M4G1 M4P2	GRASP IRON AND POSITION TO BOTTOM OF LH	0.02365	1.00	1.00	0.02365
465 MODS	TIME TO PRESS LH SIDESEAM	1.00000	0.10	1.00	0.10000
M4P0	PRESS BOTTOM HEM	0.00860	2.00	1.00	0.01720
M4P2	ASIDE IRON (4X)	0.01290	4.00	1.00	0.05160
M4G3 M4P2	GRASP SKIRT AND ROTATE AROUND IRONING BOARD	0.02795	4.00	1.00	0.11180
M4G1 M4P2	GRASP IRON AND POSITION TO SKIRT (4X)	0.02365	4.00	1.00	0.09460
465 MODS	TIME TO PRESS CENTER BACK SEAM	1.00000	0.10	1.00	0.10000
465 MODS	TIME TO PRESS RH SIDESEAM	1.00000	0.10	1.00	0.10000
M4P0	PRESS BOTTOM HEM BACK & FORTH (4X)	0.00860	8.00	1.00	0.06880
M4G1 M4P0	GRASP SKIRT & REMOVE FROM BOARD	0.01935	1.00	1.00	0.01935
M4P2	LAY SKIRT FLAT TO IRONING BOARD	0.01290	1.00	1.00	0.01290
M4G1 M4P2	GRASP IRON; POSITION TO SKIRT FRONT	0.02365	1.00	1.00	0.02365

Company ATRC APPAREL TECH & RESEARCH CENTER

Plant CAL POLY POMONACAL POLY POMONA

Part MMDU-SKIRT MARINE MATERNITY DRESS UNIFORM (SKIRT)

Component MMDU-SKIRT MARINE MATERNITY DRESS UNIFORM (SKIRT)

M4P0	IRON BACK AND FORTH ACROSS SKIRT FRONT 4X	0.00860	4.00	1.00	0.03440
M4P2	ASIDE IRON	0.01290	1.00	1.00	0.01290
SATO-WK-FLDBAG	INSPECT, TRIM, FOLD, BAG, SKIRT	0.33110	1.00	1.00	0.33110
BATS-SKR-BAG	HANDLING, FOLD & BAG MARINE MATERNITY	0.06450	1.00	1.00	0.06450
W5	STEP TO FOLDING TABLE	0.01075	6.00	1.00	0.06450
FATS-WK-INSFLD	INSPECT, TRIM, FOLD, MARINE MATERNITY SKIRT	0.13545	1.00	1.00	0.13545
SUVE-APT-SL	LAY SKIRT FLAT TO TABLE	0.01505	1.00	1.00	0.01505
SUVE-FPS-SL	FOLD LHS SKIRT TOWARD CENTER	0.02795	1.00	1.00	0.02795
SUVE-FPS-SL	FOLD RHS SKIRT TOWARD CENTER	0.02795	1.00	1.00	0.02795
M4P0	ROTATE SKIRT 90 DEGREES	0.00860	1.00	1.00	0.00860
SUVE-FPS-SL	FOLD BOTTOM END OF SKIRT SLIGHTLY	0.02795	1.00	1.00	0.02795
SUVE-FPS-SL	FOLD BOTTOM OF SKIRT TOWARD WAIST OF SKIRT	0.02795	1.00	1.00	0.02795
SATS-WS-BAGSTKR	BAG GARMENT ADD STICKER BAG	0.13115	1.00	1.00	0.13115
M4G3 M4P0	GRASP BAG & LAY TO TABLE	0.02365	1.00	1.00	0.02365
FUVM-BGM	Bag folded garment manual	0.07310	1.00	1.00	0.07310
SUVE-OSR-AA	Obtain sticker from roll and position to part	0.03440	1.00	1.00	0.03440

# Part Routing Report

Company ATRC APPAREL TECH & RESEARCH CENTER

Plant CAL POLY POMONA CAL POLY POMONA

Part MDU-SLACKS MATERNITY DRESS UNIFORM (SLACKS)

Operation	Setup	Handle	Process	Normal	PF&D	Incentive	Standard	Cost
PRE-PRESS GARMENT	0.000	.258	.953	1.211	22.0 %	10.0 %	1.599	\$0.17
CLEAN BACK SIDESEAMS AND INSEAM, MDU SLACKS	0.000	.032	.466	1.682	22.0 %	10.0 %	2.220	\$0.24
CLEAN BACK RISE, SLACKS	0.000	0.000	.647	.647	22.0 %	10.0 %	.854	\$0.09
CLEAN FRONT RISE, SLACKS	0.000	.043	.456	.499	22.0 %	10.0 %	.658	\$0.07
CLEAN FRONT SIDES & RIB, MDU SLACKS	0.000	.032	.493	1.999	22.0 %	10.0 %	2.638	\$0.29
INSPECT, TRIM, FOLD, BAG, SLACKS	0.000	.065	.131	.329	22.0 %	10.0 %	.434	\$0.05
JOIN BACK RISE & SEW PLEATS	0.000	.032	.782	1.365	22.0 %	10.0 %	1.802	\$0.20
JOIN FRONT RISE, SLACKS	0.000	.032	.513	.545	22.0 %	10.0 %	.719	\$0.08
JOIN INSEAMS, SLACKS	0.000	.092	1.998	2.091	22.0 %	10.0 %	2.760	\$0.30
JOIN RIB TO FRONT PANEL, MDU SLACK	0.000	0.000	.822	.822	22.0 %	10.0 %	1.085	\$0.12
PRESS MDU SLACKS	0.000	.129	2.250	2.379	22.0 %	10.0 %	3.140	\$0.34
CLEAN 16 1/2" BOTTOM LEG OPENING, SLACK	0.000	0.000	.626	.626	22.0 %	10.0 %	.826	\$0.09
CLEAN WAIST & SET LABEL, MDU SLACKS	0.000	.503	.476	.979	22.0 %	10.0 %	1.293	\$0.14
CUT, TACK, SET ELASTIC, MDU SLACK	0.000	.147	1.343	1.826	22.0 %	10.0 %	2.410	\$0.26
JOIN SIDESEAM, SLACKS	0.000	.050	1.827	1.877	22.0 %	10.0 %	2.478	\$0.27
TOPSTITCH RIB JOIN, MDU SLACKS	0.000	0.000	.365	.365	22.0 %	10.0 %	.481	\$0.05
	0.000	1.416	14.147	19.241			25.398	\$2.75

Parts Per Minute .039

Parts Per 8 Hour Day 18.899

# Part Workcenter Summary Report

Page 1

Company **ATRC** APPAREL TECH & RESEARCH CENTER  
Plant **CAL POLY POMONA** CAL POLY POMONA  
Part: **MDU-SLACKS** MATERNITY DRESS UNIFORM (SLACKS)

Workcenter	Normal Minutes	PF & D Incentive	Std. Minutes	Cost
Material Group <b>FLORAL OR OTHER PATTERN</b>				<b>\$2.75</b>
Busy Bees #1	13.568	22.0 % 10.0 %	17.910	\$1.94
Busy Bees #2	5.673	22.0 % 10.0 %	7.488	\$0.81
Total Minutes	19.241		25.398	
Total Hours	.321		.423	<b>\$2.75</b>
Material Group <b>MARINE CORP KHAKI POLY/WOOL BLEND</b>				<b>\$2.75</b>
Busy Bees #1	13.568	22.0 % 10.0 %	17.910	\$1.94
Busy Bees #2	5.673	22.0 % 10.0 %	7.488	\$0.81
Total Minutes	19.241		25.398	
Total Hours	.321		.423	<b>\$2.75</b>
Material Group <b>SOLID FABRIC, NO ALIGNMENT</b>				<b>\$2.75</b>
Busy Bees #1	13.568	22.0 % 10.0 %	17.910	\$1.94
Busy Bees #2	5.673	22.0 % 10.0 %	7.488	\$0.81
Total Minutes	19.241		25.398	
Total Hours	.321		.423	<b>\$2.75</b>



# Part Operation Summary Report

Page 1

Company **ATRC** APPAREL TECH & RESEARCH CENTER  
 Plant **CAL POLY POMONA** CAL POLY POMONA  
 Part **MDU-SLACKS** MATERNITY DRESS UNIFORM (SLACKS)

Workcenter/Operation	Normal Minutes	Std. Minutes	Cost
<b>Material Group FLORAL OR OTHER PATTERN</b>			<b>\$2.75</b>
<b>Busy Bees #1</b> PF&D 22.0% Incentive 10.0%			
PRE-PRESS GARMENT	1.211	1.599	\$0.17
CLEAN BACK SIDESEAMS AND INSEAM, MDU SLACKS	1.682	2.220	\$0.24
CLEAN BACK RISE, SLACKS	.647	.854	\$0.09
CLEAN FRONT RISE, SLACKS	.499	.658	\$0.07
CLEAN FRONT SIDES & RIB, MDU SLACKS	1.999	2.638	\$0.29
INSPECT, TRIM, FOLD, BAG, SLACKS	.329	.434	\$0.05
JOIN BACK RISE & SEW PLEATS	1.365	1.802	\$0.20
JOIN FRONT RISE, SLACKS	.545	.719	\$0.08
JOIN INSEAMS, SLACKS	2.091	2.760	\$0.30
JOIN RIB TO FRONT PANEL, MDU SLACK	.822	1.085	\$0.12
PRESS MDU SLACKS	2.379	3.140	\$0.34
<b>Busy Bees #2</b> PF&D 22.0% Incentive 10.0%			
CLEAN 16 1/2" BOTTOM LEG OPENING, SLACK	.626	.826	\$0.09
CLEAN WAIST & SET LABEL, MDU SLACKS	.979	1.293	\$0.14
CUT, TACK, SET ELASTIC, MDU SLACK	1.826	2.410	\$0.26
JOIN SIDESEAM, SLACKS	1.877	2.478	\$0.27
TOPSTITCH RIB JOIN, MDU SLACKS	.365	.481	\$0.05
<b>Total Minutes</b>	<b>19.241</b>	<b>25.398</b>	<b>\$2.75</b>
<b>Total Hours</b>	<b>.321</b>	<b>.423</b>	

<b>Material Group MARINE CORP KHAKI POLY/WOOL BLEND</b>			<b>\$2.75</b>
<b>Busy Bees #1</b> PF&D 22.0% Incentive 10.0%			
PRE-PRESS GARMENT	1.211	1.599	\$0.17
CLEAN BACK SIDESEAMS AND INSEAM, MDU SLACKS	1.682	2.220	\$0.24
CLEAN BACK RISE, SLACKS	.647	.854	\$0.09
CLEAN FRONT RISE, SLACKS	.499	.658	\$0.07
CLEAN FRONT SIDES & RIB, MDU SLACKS	1.999	2.638	\$0.29
INSPECT, TRIM, FOLD, BAG, SLACKS	.329	.434	\$0.05
JOIN BACK RISE & SEW PLEATS	1.365	1.802	\$0.20
JOIN FRONT RISE, SLACKS	.545	.719	\$0.08
JOIN INSEAMS, SLACKS	2.091	2.760	\$0.30
JOIN RIB TO FRONT PANEL, MDU SLACK	.822	1.085	\$0.12
PRESS MDU SLACKS	2.379	3.140	\$0.34
<b>Busy Bees #2</b> PF&D 22.0% Incentive 10.0%			
CLEAN 16 1/2" BOTTOM LEG OPENING, SLACK	.626	.826	\$0.09
CLEAN WAIST & SET LABEL, MDU SLACKS	.979	1.293	\$0.14
CUT, TACK, SET ELASTIC, MDU SLACK	1.826	2.410	\$0.26
JOIN SIDESEAM, SLACKS	1.877	2.478	\$0.27

Plant CAL POLY POMONA CAL POLY POMONA

Part MDU-SLACKS MATERNITY DRESS UNIFORM (SLACKS)

Workcenter/Operation	Normal Minutes	Std. Minutes	Cost
<b>Material Group MARINE CORP KHAKI POLY/WOOL BLEND</b>			
<b>Busy Bees #2</b>	<b>PF&amp;D 22.0% Incentive 10.0%</b>		
TOPSTITCH RIB JOIN, MDU SLACKS	.365	.481	\$0.05
Total Minutes	19.241	25.398	<b>\$2.75</b>
Total Hours	.321	.423	
<b>Material Group SOLID FABRIC, NO ALIGNMENT</b>			<b>\$2.75</b>
<b>Busy Bees #1</b>	<b>PF&amp;D 22.0% Incentive 10.0%</b>		
PRE-PRESS GARMENT	1.211	1.599	\$0.17
CLEAN BACK SIDESEAMS AND INSEAM, MDU SLACKS	1.682	2.220	\$0.24
CLEAN BACK RISE, SLACKS	.647	.854	\$0.09
CLEAN FRONT RISE, SLACKS	.499	.658	\$0.07
CLEAN FRONT SIDES & RIB, MDU SLACKS	1.999	2.638	\$0.29
INSPECT, TRIM, FOLD, BAG, SLACKS	.329	.434	\$0.05
JOIN BACK RISE & SEW PLEATS	1.365	1.802	\$0.20
JOIN FRONT RISE, SLACKS	.545	.719	\$0.08
JOIN INSEAMS, SLACKS	2.091	2.760	\$0.30
JOIN RIB TO FRONT PANEL, MDU SLACK	.822	1.085	\$0.12
PRESS MDU SLACKS	2.379	3.140	\$0.34
<b>Busy Bees #2</b>	<b>PF&amp;D 22.0% Incentive 10.0%</b>		
CLEAN 16 1/2" BOTTOM LEG OPENING, SLACK	.626	.826	\$0.09
CLEAN WAIST & SET LABEL, MDU SLACKS	.979	1.293	\$0.14
CUT, TACK, SET ELASTIC, MDU SLACK	1.826	2.410	\$0.26
JOIN SIDESEAM, SLACKS	1.877	2.478	\$0.27
TOPSTITCH RIB JOIN, MDU SLACKS	.365	.481	\$0.05
Total Minutes	19.241	25.398	<b>\$2.75</b>
Total Hours	.321	.423	

# Operator Report

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Company ATRC APPAREL TECH & RESEARCH CENTER  
 Plant CAL POLY POMONACAL POLY POMONA  
 Part MDU-SLACKS MATERNITY DRESS UNIFORM (SLACKS)  
 Component MDU-SLACKS MATERNITY DRESS UNIFORM (SLACKS)

Value	Standard Minutes
Standard	0.000
	0.000

Code	Description	Time	Freq.	Occur.	Ext. Time
SATO-WS-CLFRIS	CLEAN FRONT RISE, SLACKS	0.49878	1.00	1.00	0.49878
BATS-WS-CLFRTRS	HANDLING, CLEAN FRONT RISE, SLACKS	0.04300	1.00	1.00	0.04300
W5	STEP FROM M/C#4 BACK TO M/C#2	0.01075	4.00	1.00	0.04300
SATS-WS-CLRS6"	CLEAN 6" FRONT RISE, SLACKS	0.45578	1.00	1.00	0.45578
SATS-WSK-ASS BK	ASSEMBLE 2 PANELS & ATTACH W/STRAIGHT PIN	0.13545	1.00	1.00	0.13545
SATM-WS-CLRS6"	OVERLOCK CLEAN 6" FRONT RISE, 1 SIDE OF 1 PIECE	0.16016	2.00	1.00	0.32033
SATO-WS-JNFRIS	JOIN FRONT RISE, SLACKS	0.54478	1.00	1.00	0.54478
BATS-WS-JNFRTRS	HANDLING, JOIN FRONT RISE	0.03225	1.00	1.00	0.03225
W5	STEP FROM M/C#2 TO M/C#3	0.01075	3.00	1.00	0.03225
SATS-WS-JNRS6"	JOIN 6" RISE	0.51253	1.00	1.00	0.51253
SUVE-APP-FS	ALIGN TOP END OF FRONT RISE (MAJOR ALIGNMENT)	0.02580	1.00	1.00	0.02580
SUVE-APN-FL	ALIGN END OF ASSY UNDER NEEDLE	0.02365	1.00	1.00	0.02365
F2	DROP PRESSER FOOT	0.00430	1.00	1.00	0.00430
SUVE-SBL-AA	SEW BACKTACK, LEVER	0.02150	1.00	1.00	0.02150
M4G1 M4P0	GRASP LEGS OF SLACKS AND PUSH BACK ON TABLE	0.01935	1.00	1.00	0.01935
SUVE-RHP-AM	REGRAASP PLYS 3X	0.01935	3.00	1.00	0.05805
SUVE-APP-FS	ALIGN PLYS TOGETHER 3X	0.02580	3.00	1.00	0.07740
F2	PEDAL TO SEW 3X	0.00430	3.00	1.00	0.01290
SUVF-CHU-2N	Sew 2", US53600 single ndl chainslitch, 1770 RPM,normal	0.01662	2.00	1.00	0.03324
SUVF-CHU-2E	Sew 2", US56300 single ndl chainslitch, 1770 RPM, exact	0.02092	1.00	1.00	0.02092
SUVE-SBL-AA	SEW BACKTACK, LEVER	0.02150	1.00	1.00	0.02150

Plant CAL POLY POMONACAL POLY POMONA

Part MDU-SLACKS MATERNITY DRESS UNIFORM (SLACKS)  
 Component MDU-SLACKS MATERNITY DRESS UNIFORM (SLACKS)

SUVE-RNW-AA	REPOSITION NEEDLE USING HANDWHEEL	0.02365	1.00	1.00	0.02365
SUVE-RPR-FL	ROTATE AROUND NEEDLE TO SEW OVER SEAM 2ND	0.02795	1.00	1.00	0.02795
M4G1 M4P0	GRASP LEGS OF SLACKS AND PUSH OUT OF WAY	0.01935	1.00	1.00	0.01935
F2	PEDAL TO SEW 2X	0.00430	2.00	1.00	0.01935
SUVE-CHU-3N	Sew 3", US56300 single ndl chainstitch, 1770 RPM,normal	0.02171	1.00	1.00	0.00860
SUVE-CHU-3E	Sew 3", US56300 single ndl chainstitch, 1770 RPM, exact	0.02601	1.00	1.00	0.02171
SUVE-SBL-AA	SEW BACKTACK, LEVER	0.02150	1.00	1.00	0.02601
SUVE-CPX-SA	CUT THREAD	0.03440	1.00	1.00	0.02150
SUVE-CPX-SA	CUT 2ND THREAD	0.01075	1.00	1.00	0.03440
SATO-WS-JNRIB	JOIN RIB TO FRONT PANEL, MDU SLACK	0.82201	1.00	1.00	0.01075
SATS-WK-JNRIB	JOIN 25" RIB TO FRONT, MARINE MATERNITY	0.82201	1.00	1.00	0.82201
SUVE-RHP-AL	REPOSITION RH TO START CORNER OF FRONT PANEL	0.02150	1.00	1.00	0.82201
SUVE-OOO-NM	LH GRASP END OF RIB PANEL & LIFT FROM STACK	0.02365	1.00	1.00	0.02150
SUVE-APN-SL	ALIGN CORNER OF RIB UNDER NEEDLE	0.01720	1.00	1.00	0.02365
F2	PEDAL TO DROP PRESSER FOOT TO HOLD RIB	0.00430	1.00	1.00	0.01720
SUVE-RHP-AL	LH REGRASP FRONT PANEL	0.02150	1.00	1.00	0.00430
SUVE-OOO-FS	GRASP CORNER OF RIB FROM UNDER PRESSER	0.03010	1.00	1.00	0.02150
SUVE-APP-FS	ALIGN CORNERS OF RIB AND FRONT PANEL	0.02580	1.00	1.00	0.03010
SUVE-APN-FS	ALIGN ASSY UNDER NEEDLE	0.01935	1.00	1.00	0.02580
F2	PEDAL TO START SEW	0.00430	1.00	1.00	0.01935
SUVE-LSS-1N	Sew 1", Singer 591 Single Ndl Lockstitch,2000 RPM,normal	0.01095	1.00	1.00	0.00430
SUVE-RHP-AS	REGRASP FRONT PANEL APPROX. 4" FRONT START	0.01720	1.00	1.00	0.01095
SUVE-APP-SS	ALIGN FRONT PANEL TO RIB PANEL AT EDGE	0.01935	1.00	1.00	0.01720
F2	PEDAL TO START SEW	0.00430	1.00	1.00	0.01935
SUVE-LSS-3N	Sew 3", Singer 591 Single Ndl Lockstitch,2000 RPM,normal	0.01995	1.00	1.00	0.00430
SUVE-RHP-AM	REGRASP FRONT PANEL	0.01935	1.00	1.00	0.01995
M3P0	PULL FRONT PANEL TO LEFT TO MOVE EXCESS BULK	0.00645	1.00	1.00	0.01935
SUVE-RHP-AM	REGRASP FRONT PANEL NEAR CENTER	0.01935	1.00	1.00	0.00645
SUVE-FPS-FS	FOLD FRONT RISE JOIN SEAM DOWN FLAT, SLACKS	0.02580	1.00	1.00	0.01935
SUVE-APP-SS	ALIGN FRONT PANEL TO RIB NEAR CENTER	0.01935	1.00	1.00	0.02580
			1.00	1.00	0.01935

## Company ATRC APPAREL TECH &amp; RESEARCH CENTER

Plant CAL POLY POMONACAL POLY POMONA

Part MDU-SLACKS MATERNITY DRESS UNIFORM (SLACKS)

Component MDU-SLACKS MATERNITY DRESS UNIFORM (SLACKS)

M4G1 M2P2	RH GRASP UNDER FRONT TO RIB & PULL TO ALIGN	0.01935	1.00	0.01935
SUVE-RHP-AS	LH REPOSITION HAND APPROX 4" IN FRONT OF	0.01720	1.00	0.05160
M1P2	MINOR ALIGN FRONT PANEL TO RIB (3X)	0.00645	1.00	0.01935
F2	PEDAL TO START SEW (3X)	0.00430	1.00	0.01290
SUVF-LSS-3N	Sew 3", Singer 591 Single Ndl Lockstitch, 2000 RPM, normal	0.01995	1.00	0.05985
SUVE-RHP-AL	LH GRASP LEGS OF SLACKS	0.02150	1.00	0.04300
M3P0	PUSH LEGS OF SLACKS BACK ON MACHINE TABLE	0.00645	1.00	0.00645
SUVE-RHP-AM	LH REGRASP FRONT PANEL AT END	0.01935	1.00	0.01935
M3G1	RH GRASP RIB PANEL AT END	0.00860	1.00	0.00860
SUVE-APP-FS	ALIGN ENDS OF FRONT PANEL AND RIB TOGETHER	0.02580	1.00	0.02580
M4G1 M2P2	RH GRASP UNDER FRONT TO RIB & PULL TO ALIGN	0.01935	1.00	0.01935
SUVE-RHP-AS	LH GRASP FRONT PANEL APPROX. 4" IN FRONT OF	0.01720	1.00	0.05160
M1P2	MINOR ALIGN FRONT PANEL TO RIB (3X)	0.00645	1.00	0.01935
F2	PEDAL TO START SEW (3X)	0.00430	1.00	0.01290
SUVF-LSS-3N	Sew 3", Singer 591 Single Ndl Lockstitch, 2000 RPM, normal	0.01995	1.00	0.05985
J2	REGRASP CORNER OF ASSY TO MOVE FINGERS OUT	0.00430	1.00	0.00430
F2	PEDAL TO SEW	0.00430	1.00	0.00430
SUVF-LSS-3N	Sew 3", Singer 591 Single Ndl Lockstitch, 2000 RPM, normal	0.01995	1.00	0.01995
SUVE-CPS-SA	CUT PART WITH SCISSORS - SOME alignment care	0.03440	1.00	0.03440
SATO-WS-CLRBFT	CLEAN FRONT SIDES & RIB, MDU SLACKS	1.99860	1.00	1.99860
BATS-WS-CLRB	BUNDLING- MATERNITY SLACKS M/C#2, CLEAN RIB	0.03225	1.00	0.03225
W5	STEP TO MACHINE #2, REGRASP JN SEAM EN ROUTE	0.01075	1.00	0.03225
SATS-WK-CLNRBJN	CLEAN RIB JOIN ON MARINE MATER SKIRT/SLACK	0.26079	1.00	0.26079
SUVE-APT-SM	LAY FRONT PANEL TO MIC TABLE TO LEFT OF NEEDLE	0.01075	1.00	0.01075
SUVE-RHP-AM	REGRASP FRONT/RIB JOIN AT END	0.01935	1.00	0.01935
SUVE-APN-SS	ALIGN END OF RIB JOIN SEAM TO PRESSER FOOT	0.01290	1.00	0.01290
F2	PEDAL TO START SEW	0.00430	1.00	0.00430
SUVF-CHU-2N	Sew 2", US53600 single ndl chainstitch, 1770 RPM, normal	0.01662	1.00	0.01662
SUVE-RHP-AM	REPOSITION HAND ON SEAM TO GUIDE TO NEEDLE	0.01935	1.00	0.05805
F2	PEDAL START MACHINE (3X)	0.00430	1.00	0.01290

Company ATRC APPAREL TECH &amp; RESEARCH CENTER

Plant CAL POLY POMONACAL POLY POMONA

Part MDU-SLACKS MATERNITY DRESS UNIFORM (SLACKS)

Component MDU-SLACKS MATERNITY DRESS UNIFORM (SLACKS)

SUVF-CHU-7N	Sew 7", US56300 SN chainst, 3540 RPM,normal stop	0.02425	3.00	1.00	0.07274
SUVE-RHP-AS	REGASP AT FRONT RISE JOIN SEAM, SLACKS	0.01720	1.00	1.00	0.01720
M1P0	SLIDE FINGERS TO HOLE FRONT RISE JOIN SEAM	0.00215	1.00	1.00	0.00215
J2	REGASP TO MOVE FINGERS OUT OF WAY OF	0.00430	1.00	1.00	0.00430
SUVF-CHU-2N	Sew 2", US53600 single ndl chainstitch, 1770 RPM,normal	0.01662	1.00	1.00	0.01662
SUVE-CTS-AA	CUT THREAD WITH PALMED SNIPS	0.01290	1.00	1.00	0.01290
SATS-WS-CLFRSDS	CLEAN 48" FRONT LEFT/RIGHT SIDESEAM, MARINE	0.49337	1.00	1.00	0.49337
M4P0	PULL FRONT BACK FROM BEHIND NEEDLE	0.00860	1.00	1.00	0.00860
SUVE-RHP-AS	REGASP FRONT PANEL AT SIDE BOTTOM	0.01720	1.00	1.00	0.01720
SUVE-APN-SM	ALIGN BOTTOM FRONT CORNER TO NEEDLE	0.01505	1.00	1.00	0.01505
F2	PEDAL TO SEW ON TO FRONT	0.00430	1.00	1.00	0.00430
SUVF-CHU-2N	Sew 2", US53600 single ndl chainstitch, 1770 RPM,normal	0.01662	1.00	1.00	0.01662
SUVE-RHP-AS	REGASP FRONT PANEL (6X)	0.01720	6.00	1.00	0.10320
F2	PEDAL TO START SEW (6X)	0.00430	6.00	1.00	0.02580
SUVF-CHU-6N	Sew 6", US56300 single ndl chainstitch, 2950 RPM,normal	0.02476	6.00	1.00	0.14854
SUVE-RHP-AS	REGASP FRONT AT RIB JOIN SEAM	0.01720	1.00	1.00	0.01720
SUVE-FPS-SS	FOLD RIB JOIN SEAM OVER, SIMPLE FOLD	0.01935	1.00	1.00	0.01935
F2	PEDAL TO START M/C (REDUCED SPEED NEXT 4"	0.00430	1.00	1.00	0.00430
SUVF-CHU-2N	Sew 2", US53600 single ndl chainstitch, 1770 RPM,normal	0.01662	2.00	1.00	0.03324
SUVE-RHP-AM	RH GRASP END OF RIB; RH GRASP APPROX. 6" FROM	0.01935	1.00	1.00	0.01935
F2	PEDAL START SEW	0.00430	1.00	1.00	0.00430
SUVF-CHU-3N	Sew 3", US56300 single ndl chainstitch, 1770 RPM,normal	0.02171	1.00	1.00	0.02171
SUVF-CHU-3N	Sew 3", US56300 single ndl chainstitch, 1770 RPM,normal	0.02171	1.00	1.00	0.02171
SUVE-CTS-AA	CUT THREAD WITH PALMED SNIPS	0.01290	1.00	1.00	0.01290
SATS-WS-CLFRINS	CLEAN 35" LH/RH INSEAM, SLACKS	0.71883	1.00	1.00	0.71883
M4P0	PULL FRONT BACK FROM BEHIND NEEDLE	0.00860	1.00	1.00	0.00860
SUVE-RHP-AS	REGASP FRONT PANEL AT LH BOTTOM INSEAM	0.01720	1.00	1.00	0.01720
SUVE-APN-SM	ALIGN INSEAM TO NEEDLE	0.01505	1.00	1.00	0.01505
F2	PEDAL TO SEW	0.00430	1.00	1.00	0.00430
SUVF-CHU-2N	Sew 2", US53600 single ndl chainstitch, 1770 RPM,normal	0.01662	1.00	1.00	0.01662

Company ATRC APPAREL TECH & RESEARCH CENTER  
 Plant CAL POLY POMONACAL POLY POMONA  
 Part MDU-SLACKS MATERNITY DRESS UNIFORM (SLACKS)  
 Component MDU-SLACKS MATERNITY DRESS UNIFORM (SLACKS)

SUVE-RHP-AM	REGRASP SLACKS (EXCESS) 2X	0.01935	2.00	1.00	0.03870
M4P0	PUSH EXCESS OUT OF WAY 2X	0.00860	2.00	1.00	0.01720
SUVE-RHP-AS	REGRASP FRONT PANEL (5X)	0.01720	5.00	1.00	0.08600
F2	PEDAL TO START SEW (5X)	0.00430	5.00	1.00	0.02150
SUVE-CHU-6N	Sew 6", US56300 single ndl chainstitch, 2950 RPM,normal	0.02476	5.00	1.00	0.12378
SUVE-RHP-AS	REGRASP RISE JOIN SEAM	0.01720	1.00	1.00	0.01720
SUVE-FPS-SS	FOLD SEAM OVER, SIMPLE FOLD	0.01935	1.00	1.00	0.01935
F2	PEDAL TO START M/C (REDUCED SPEED NEXT 4"	0.00430	1.00	1.00	0.00430
SUVE-CHU-2N	Sew 2", US53600 single ndl chainstitch, 1770 RPM,normal	0.01662	2.00	1.00	0.03324
SUVE-RHP-AS	REGRASP RH FRONT PANEL (5X)	0.01720	5.00	1.00	0.08600
F2	PEDAL START MACHINE (5X)	0.00430	5.00	1.00	0.02150
SUVE-CHU-6N	Sew 6", US56300 single ndl chainstitch, 2950 RPM,normal	0.02476	5.00	1.00	0.12378
SUVE-CPS-SA	CUT THREAD WITH SNIPS	0.03440	1.00	1.00	0.03440
M4G1 M4P0	GRASP START END AND PULL BACK	0.01935	1.00	1.00	0.01935
SUVE-CPX-SA	CUT THREAD ON START END	0.01075	1.00	1.00	0.01075
SATS-WS-CLFRSDS	CLEAN 48" FRONT LEFT/RIGHT SIDESEAM, MARINE	0.49337	1.00	1.00	0.49337
SATO-WS-CLBKRS	CLEAN BACK RISE, SLACKS	0.64684	1.00	1.00	0.64684
SATS-WS-CLRS20"	CLEAN 20" BACK RISE, SLACKS	0.64684	1.00	1.00	0.64684
BATS-WS-CLBKRS	HANDLING, CLEAN BACK RISE, SLACKS	0.06450	1.00	1.00	0.06450
SATS-WSK-ASS BK	ASSEMBLE 2 PANELS & ATTACH W/STRAIGHT PIN	0.13545	1.00	1.00	0.13545
SATM-WS-CLRS20"	OVERLOCK CLEAN 20" BACK RISE, 1 SIDE OF 1 PIECE	0.22344	2.00	1.00	0.44689
SATO-WS-JNBKRIS	JOIN BACK RISE & SEW PLEATS	1.36500	1.00	1.00	1.36500
BATS-WS-JNBKRS	HANDLING, JOIN BACK RISE, SLACKS	0.03225	1.00	1.00	0.03225
W5	STEP FROM M/C#2 TO M/C#3	0.01075	3.00	1.00	0.03225
SATS-WS-JNRS20"	JOIN 20" RISE	0.55123	1.00	1.00	0.55123
SUVE-APP-FL	ALIGN TOP END OF BACK RISE	0.03010	1.00	1.00	0.03010
SUVE-APN-FL	ALIGN END OF ASSY UNDER NEEDLE	0.02365	1.00	1.00	0.02365
F2	DROP PRESSER FOOT	0.00430	1.00	1.00	0.00430
SUVE-SBL-AA	SEW BACKTACK, LEVER	0.02150	1.00	1.00	0.02150
M4G1 M4P0	GRASP LEGS OF SLACKS AND PUSH BACK ON TABLE	0.01935	1.00	1.00	0.01935

Company ATRC APPAREL TECH &amp; RESEARCH CENTER

Plant CAL POLY POMONACAL POLY POMONA

Part MDU-SLACKS MATERNITY DRESS UNIFORM (SLACKS)

Component MDU-SLACKS MATERNITY DRESS UNIFORM (SLACKS)

SUVE-RHP-AM	REGRASP PLYS 5X	0.01935	5.00	1.00	0.09675
SUVE-APP-FS	ALIGN PLYS TOGETHER 5X	0.02580	5.00	1.00	0.12900
F2	PEDAL TO SEW 5X	0.00430	5.00	1.00	0.02150
SUVF-CHU-4N	Sew 4", US56300 single ndl chainsitch, 2950 RPM,normal	0.01866	4.00	1.00	0.07462
SUVF-CHU-4E	Sew 4", US56300 single ndl chainsitch, 2950 RPM, exact	0.02296	1.00	1.00	0.02296
SUVE-SBL-AA	SEW BACKTACK, LEVER	0.02150	1.00	1.00	0.02150
M4G1 M4P0	GRASP LEGS OF SLACKS AND PUSH OUT OF WAY	0.01935	1.00	1.00	0.01935
SUVE-SBL-AA	SEW BACKTACK, LEVER	0.02150	1.00	1.00	0.02150
SUVE-CPS-SA	CUT THREAD	0.03440	1.00	1.00	0.03440
SUVE-CPX-SA	CUT 2ND THREAD	0.01075	1.00	1.00	0.01075
SATS-WK-MKPLT	MAKE 1 8" PLEAT ON BACK WOMEN'S MARINE	0.39076	2.00	1.00	0.78153
M4P0	PULL BACK PANEL BACK FROM BEHIND NEEDLE	0.00860	1.00	1.00	0.00860
SUVE-RHP-AM	REPOSITION HANDS TO TO AREA OF PLEAT	0.01935	1.00	1.00	0.01935
SUVE-FPP-FA	PINCHFOLD PLEAT ALIGNING NOTCHES	0.01720	1.00	1.00	0.01720
SUVE-APT-SL	LIFT AND LAY FOLDED PLEAT TO TABLE	0.01505	1.00	1.00	0.01505
J2	REPOSITION FINGERS ON FOLDED EDGE	0.00430	1.00	1.00	0.00430
SUVE-APN-SM	ALIGN END OF PLEAT TO FRONT OF PRESSER FOOT	0.01505	1.00	1.00	0.01505
J2	REMOVE FINGERS FROM UNDER PRESSER FOOT	0.00430	1.00	1.00	0.00430
SUVE-APP-FS	REALIGN TOP EDGES OF PLEAT	0.02580	1.00	1.00	0.02580
SUVE-APN-FS	ALIGN END OF PLEAT UNDER PRESSER FOOT	0.01935	1.00	1.00	0.01935
J2	REMOVE FINGERS FROM UNDER PRESSER FOOT	0.00430	1.00	1.00	0.00430
F2	DROP PRESSER FOOT	0.00430	1.00	1.00	0.00430
SUVE-SBL-AA	SEW BACKTACK, LEVER	0.02150	1.00	1.00	0.02150
SUVE-RHP-AM	REPOSITION RH FROM LEVER TO FOLDED PLEAT	0.01935	1.00	1.00	0.01935
M2P5	REALIGN BOTTOM OF PLEAT	0.01505	1.00	1.00	0.01505
SUVE-RHP-AS	REPOSITION LH TO HOLD CENTER OF FOLD	0.01720	1.00	1.00	0.01720
F1	PEDAL TO MAKE 7 SEW BURST	0.00215	7.00	1.00	0.01505
SUVF-LSS-1N	Sew 1",Singer 591 Single Ndl Lockstitch,2000 RPM,normal	0.01095	7.00	1.00	0.07666
SUVF-LSS-1E	Sew 1",Singer 591 Single Ndl Lockstitch, 2000 RPM,exact	0.01525	1.00	1.00	0.01525
SUVE-SBL-AA	SEW BACKTACK, LEVER	0.02150	1.00	1.00	0.02150



## Company ATRC APPAREL TECH &amp; RESEARCH CENTER

Plant CAL POLY POMONACAL POLY POMONA

Part MDU-SLACKS MATERNITY DRESS UNIFORM (SLACKS)

Component MDU-SLACKS MATERNITY DRESS UNIFORM (SLACKS)

SUVE-CPS-FS	CUT THREAD ON BOTTOM OF PLEAT WITH SNIPS	0.04085	1.00	0.04085
SUVE-CPX-SA	CUT THREAD ON TOP OF PLEAT	0.01075	1.00	0.01075
SATO-WS-CLBK	CLEAN BACK SIDESEAMS AND INSEAM, MDU SLACKS	1.68214	1.00	1.68214
BATS-WS-CLBK	BUNDLING- MATERNITY SLACKS M/C#2, CLEAN BACK	0.03225	1.00	0.03225
W5	STEP FROM M/C#3 TO M/C#2, REGRASP IN ROUTE	0.01075	3.00	0.03225
SATS-WS-CLBKSS	CLEAN 48" BACK LEFT/RIGHT SIDESEAM, MARINE MATER	0.46553	1.00	0.46553
M4P0	PULL FRONT BACK FROM BEHIND NEEDLE	0.00860	1.00	0.00860
SUVE-RHP-AS	REGRASP FRONT PANEL AT SIDE BOTTOM	0.01720	1.00	0.01720
SUVE-APN-SM	ALIGN BOTTOM FRONT CORNER TO NEEDLE	0.01505	1.00	0.01505
F2	PEDAL TO SEW ON TO FRONT	0.00430	1.00	0.00430
SUVF-CHU-2N	Sew 2", US53600 single ndl chainstitch, 1770 RPM, normal	0.01720	1.00	0.01720
SUVE-RHP-AS	REGRASP BACK PANEL (7X)	0.00430	7.00	0.03010
F2	PEDAL TO START SEW (7X)	0.02476	7.00	0.17330
SUVF-CHU-6N	Sew 6", US56300 single ndl chainstitch, 2950 RPM, normal	0.01935	1.00	0.01935
SUVE-RHP-AM	RH GRASP END OF RIB; RH GRASP APPROX. 6" FROM	0.00430	1.00	0.00430
F2	PEDAL START SEW	0.02171	1.00	0.02171
SUVF-CHU-3N	Sew 3", US56300 single ndl chainstitch, 1770 RPM, normal	0.02171	1.00	0.02171
SUVE-CTS-AA	CUT THREAD WITH PALMED SNIPS	0.01290	1.00	0.01290
SATS-WS-CLFRINS	CLEAN 35" LH/RH INSEAM, SLACKS	0.71883	1.00	0.71883
SATS-WS-CLBKSS	CLEAN 48" BACK LEFT/RIGHT SIDESEAM, MARINE MATER	0.46553	1.00	0.46553
SATO-WS-JNINSM	JOIN INSEAMS, SLACKS	2.09070	1.00	2.09070
BATS-WS-JNINS	HANDLING, JOIN 35" INSEAMS, SLACKS	0.09245	1.00	0.09245
W5	STEP TO TABLE	0.01075	3.00	0.03225
SUVE-OOO-NL	OBTAIN FRONT ASSY FROM TABLE	0.02795	1.00	0.02795
W5	STEP TO M/C#3	0.01075	3.00	0.03225
SATS-WS-JNINSM	JOIN INSEAMS, SLACKS	1.99825	1.00	1.99825
SUVE-RHP-AL	REGRASP FRONT ASSY AT CROTCH	0.02150	1.00	0.02150
SUVE-RHP-AL	REGRASP BACK ASSY AT CROTCH	0.02150	1.00	0.02150
SUVE-APP-FL	ALIGN FRONT AND BACK AT INSEAM	0.03010	1.00	0.03010

Company ATRC APPAREL TECH &amp; RESEARCH CENTER

Plant CAL POLY POMONACAL POLY POMONA

Part MDU-SLACKS MATERNITY DRESS UNIFORM (SLACKS)

Component MDU-SLACKS MATERNITY DRESS UNIFORM (SLACKS)

SUVE-FPS-FS	FOLD RISE SEAMS BACK SIMPLE	0.02580	4.00	1.00	0.10320
SUVE-APS-FL	STRAIGHTEN LHS INSEAM BY SLIDING RH DOWN	0.02795	1.00	1.00	0.02795
SUVE-APP-FS	MINOR ALIGNMENT OF FIRST 4" OF INSEAM	0.02580	1.00	1.00	0.02580
SUVE-APT-NL	LAY ASSY TO TABLETOP	0.01075	1.00	1.00	0.01075
SUVE-RHP-AS	GRASP ASSY AT CROTCH	0.01720	1.00	1.00	0.01720
M1G1 M1P0	STRAIGHTEN FRONT & BACK RISE SEAMS	0.00645	4.00	1.00	0.02580
SATM-WS-JNINS35	SEW BACKTACK, LEVER	0.80240	1.00	1.00	0.80240
SUVE-RHP-AL	REGRASP SLACKS	0.02150	1.00	1.00	0.02150
SUVE-APT-SL	ALIGN SLACKS ON TABLE BY FLIPPING OVER TO	0.01505	1.00	1.00	0.01505
SUVE-RHP-AL	REGRASP AT CROTCH	0.02150	1.00	1.00	0.02150
SUVE-APS-FM	STRAIGHTEN INSEAMS PLYS BY SLIDING FINGERS	0.02580	1.00	1.00	0.02580
SUVE-APP-FS	MINOR ALIGN PLYS APPROX. 4" FROM NEEDLE	0.02580	1.00	1.00	0.02580
SATM-WS-JNINS35	JOIN 35" INSEAMS, SLACKS	0.80240	1.00	1.00	0.80240
FATO-WS-PREPRSS	PRE-PRESS GARMENT	1.21140	1.00	1.00	1.21140
BATS-WS-PREPRSS	HANDLING, PRE-PRESS SLACKS	0.25800	1.00	1.00	0.25800
W5	STEP TO IRONING BOARD	0.01075	12.00	1.00	0.12900
W5	STEP TO MIC#4	0.01075	12.00	1.00	0.12900
FATS-WS-PREPRSS	PRE-PRESS INSEAMS, RISE, PLEATS, MATERNITY	0.95340	1.00	1.00	0.95340
SUVE-APT-SL	LAY SLACKS TO IRONING BOARD, RH LAY INSEAM	0.01505	2.00	1.00	0.03010
M4G3 M2P0	STRAIGHTEN FABRIC	0.01935	2.00	1.00	0.03870
M4G1 M4P2	GET IRON; PSN TO BOTTOM OF RH INSEAM; SIMO: LH	0.02365	2.00	1.00	0.04730
465 MODS	TIME TO IRON RH INSEAM	1.00000	0.15	1.00	0.15000
465 MODS	TIME TO IRON LH INSEAM	1.00000	0.15	1.00	0.15000
M4P2	ASIDE IRON	0.01290	2.00	1.00	0.02580
M4G3 M4P0	GRASP RH LEG AND LIFT FROM IRONING BOARD	0.02365	2.00	1.00	0.04730
SUVE-APT-SL	ROTATE GARMENT TO IRON FRONT RISE SEAM	0.01505	2.00	1.00	0.03010
M4G3 M2P0	STRAIGHTEN FABRIC	0.01935	2.00	1.00	0.03870
M4G1 M4P2	GET IRON; PSN TO SEAM; SIMO: LAY SEAM FLAT	0.02365	2.00	1.00	0.04730
465 MODS	TIME TO IRON FRONT RISE SEAM	1.00000	0.08	1.00	0.08300
465 MODS	TIME TO IRON BACK RISE SEAM	1.00000	0.11	1.00	0.11000

Company ATRC APPAREL TECH &amp; RESEARCH CENTER

Plant CAL POLY POMONACAL POLY POMONA

Part MDU-SLACKS MATERNITY DRESS UNIFORM (SLACKS)

Component MDU-SLACKS MATERNITY DRESS UNIFORM (SLACKS)

M3P2	PSN IRON TO 1ST PLEAT	0.01075	1.00	0.01075
465 MODS	TIME TO IRON 1ST PLEAT	1.00000	1.00	0.04100
M4P2	PSN IRON TO 2ND PLEAT	0.01290	1.00	0.01290
465 MODS	TIME TO IRON 2ND PLEAT	1.00000	1.00	0.04100
M4P2	ASIDE IRON	0.01290	1.00	0.02580
M4G3 M4P0	GRASP GARMENT AND LIFT	0.02365	1.00	0.02365
0 MOD	REPEAT ELEMENTS TO COMPLETE LH INSEAM AND	0.00000	1.00	0.00000
SATO-WS-TSRIB	TOPSTITCH RIB JOIN, MDU SLACKS	0.36461	1.00	0.36461
SATS-WK-TSRIBJN	TOPSTITCH 25" RIB JOIN, MARINE MATERNITY	0.36461	1.00	0.36461
SUVE-APN-FL	ALIGN RIB JOIN SEAM UNDER NEEDLE	0.02365	1.00	0.02365
M1P2	WIGGLE SEAM WITH FINGER LAY FLAT	0.00645	1.00	0.01290
SUVE-RNW-AA	REPOSITION NEEDLE USING HANDWHEEL	0.02365	1.00	0.02365
SUVE-RHP-AL	REPOSITION RH TO FRONT TO SPREAD SEAM FLAT	0.02150	1.00	0.02150
F2	PEDAL START M/C (6X)	0.00430	1.00	0.02580
SUVE-ISS-4N	Sew 4" Singer 591 Single Ndl Lockstitch, 3000 RPM, normal	0.01845	1.00	0.11071
SUVE-RHP-AS	REPOSITION HANDS TO SPREAD SEAM (6X)	0.01720	1.00	0.10320
F2	PEDAL START MACHINE	0.00430	1.00	0.00430
SUVE-ISS-1N	Sew 1" Singer 591 Single Ndl Lockstitch, 2000 RPM, normal	0.01095	1.00	0.01095
F2	PEDAL BACK TO CUT THREAD	0.00430	1.00	0.00430
SUVE-CTS-AA	CUT THREAD WITH PALMED SNIPS	0.01290	1.00	0.01290
SUVE-CPX-SA	CUT STARTING END LOOSE THREAD	0.01075	1.00	0.01075
SATO-WS-JNSIDES	JOIN SIDESEAM, SLACKS	1.87693	1.00	1.87693
BATS-WS-JNSDSM	BUNDLING- MARINE MATER SLACKS M/C#4	0.05000	1.00	0.05000
465 MODS	TIME TO ROTATE M/C PRESSER FOOT TO JOIN SIDES	1.00000	1.00	0.05000
SATS-WS-JNSS48	JOIN 1 48" SIDESEAM, MATERNITY SLACKS	0.91347	1.00	1.82693
M4G1 M4P0	PULL BACK FROM BEHIND NEEDLE	0.01935	1.00	0.01935
SUVE-RHP-AM	REGRAASP TOP OF RIB AND TOP OF BACK PANEL	0.01935	1.00	0.01935
SUVE-APP-FL	ALIGN RIB TO BACK PANEL AT TOP CORNER	0.03010	1.00	0.03010
SUVE-APS-FL	ALIGN SIDESEAM BY SLIDING HAND DOWN FABRIC TO	0.02795	1.00	0.02795
SUVE-APN-FL	ALIGN ASSY UNDER NEEDLE	0.02365	1.00	0.02365

Company ATRC APPAREL TECH &amp; RESEARCH CENTER

Plant CAL POLY POMONACAL POLY POMONA

Part MDU-SLACKS MATERNITY DRESS UNIFORM (SLACKS)

Component MDU-SLACKS MATERNITY DRESS UNIFORM (SLACKS)

F2	DROP PRESSER FOOT	0.00430	1.00	0.00430
M4G3 M4P0	GRASP OPPOSITE LEG AND PUSH TO BACK OF TABLE	0.02365	1.00	0.02365
SUVE-APS-SL	SLIDE HANDS TO BOTTOM OF LEG ALIGNING PLYS	0.02150	1.00	0.02150
SUVE-APP-SM	ALIGN BOTTOM OF LEG PLYS TOGETHER	0.02150	1.00	0.02150
SUVE-RHP-AM	RH REGRASP ASSY 1/3 OF THE WAY UP	0.01935	1.00	0.01935
SUVE-RHP-AM	LH GRASP ASSY FROM RH	0.01935	1.00	0.01935
SUVE-RHP-AM	RH REGRASP ASSY 2/3 OF THE WAY UP	0.01935	1.00	0.01935
SUVE-RHP-AM	LH GRASP ASSY FROM RH	0.01935	1.00	0.01935
F2	PEDAL TO START SEW	0.00430	1.00	0.00430
SUVE-SBB-AA	SEW BACKTACK, BUTTON	0.01505	1.00	0.01505
SUVE-RHP-AS	LH REGRASP TOP PLY APPROX. 4" IN FRONT OF	0.01720	1.00	0.03440
F2	PEDAL TO SEW	0.00430	1.00	0.00860
SUVF-LSS-4N	Sew 4", Singer 591 Single Ndl Lockstitch, 3000 RPM, normal	0.01845	1.00	0.03690
SUVE-RHP-AS	REGRASP AT RIB JOIN SEAM	0.01720	1.00	0.01720
SUVE-APP-FS	ALIGN PLYS AT RIB JOIN SEAM	0.02580	1.00	0.02580
SUVF-LSS-2N	Sew 2", Singer 591 Single Ndl Lockstitch, 2000 RPM, normal	0.01545	1.00	0.01545
SUVE-RHP-AS	REGRASP APPROX. 6" FROM NEEDLE 6X	0.01720	1.00	0.10320
SUVE-APP-SS	MINOR ALIGN PLYS 5X	0.01935	1.00	0.09675
SUVF-LSS-6N	Sew 6", Singer 591 Single Ndl Lockstitch, 3000 RPM, normal	0.02445	1.00	0.14671
F2	PEDAL TO SEW	0.00430	1.00	0.02580
SUVE-APP-FS	ALIGN ENDS TOGETHER	0.02580	1.00	0.02580
F2	PEDAL TO SEW	0.00430	1.00	0.00430
SUVF-LSS-3E	Sew 3", Singer 591 Single Ndl Lockstitch, 2000 RPM, exact	0.02425	1.00	0.02425
SUVE-SBB-AA	SEW BACKTACK, BUTTON	0.01505	1.00	0.01505
SUVE-CPS-SA	CUT THREAD WITH SCISSORS	0.03440	1.00	0.03440
SUVE-CPX-SA	CUT 2ND THREAD	0.01075	1.00	0.01075
SATO-WS-CLWSTLB	CLEAN WAIST & SET LABEL, MDU SLACKS	0.97942	1.00	0.97942
BATS-SKR-MC5	BUNDLE/HANDLING-CLEAN WAIST-MACHINE #5	0.50310	1.00	0.50310
W5	STEP TO M/C #5, OVERLOCK; SIMO: TURN SKIRT	0.01075	1.00	0.03225
SATS-WS-TURN	SLACKS, LH GRASP AND PULL RIGHT PANT LEG ONTO	0.15695	1.00	0.47085

## Company ATRC APPAREL TECH &amp; RESEARCH CENTER

Plant CAL POLY POMONACAL POLY POMONA

Part MDU-SLACKS MATERNITY DRESS UNIFORM (SLACKS)

Component MDU-SLACKS MATERNITY DRESS UNIFORM (SLACKS)

SATS-WK-CL-WAIST	CLEAN WAIST & SET LABEL, MARINE MATERNITY	0.47632	1.00	0.47632
SUVE-RHP-AL	REGRASP WAIST AT LHS SIDESEAM	0.02150	1.00	0.02150
SUVE-APN-FM	ALIGN WAIST UNDER PRESSER FOOT KEEPING SEAM	0.02150	1.00	0.02150
M4G1 M4P0	REPOSITION LEGS OF SLACKS BACK ONTO TABLE	0.01935	1.00	0.01935
F2	PEDAL TO START SEW	0.00430	1.00	0.00430
SUVF-OL-3N	Sew 3", US39500 OVERLOCK, 3250 RPM, NORMAL stop	0.01476	1.00	0.01476
SUVE-RHP-AS	REGRASP AT LHS PLEAT	0.01720	1.00	0.01720
SUVE-FPS-FS	FOLD PLEAT TO SEW DOWN	0.02580	1.00	0.02580
F2	PEDAL TO START SEW	0.00430	1.00	0.00430
SUVF-OL-3N	Sew 3", US39500 OVERLOCK, 3250 RPM, NORMAL stop	0.01476	1.00	0.01476
SUVE-RHP-AS	REGRASP AT BACK PANEL JOIN SEAM	0.01720	1.00	0.01720
SUVE-RPS-AS	REPOSITION SEAM BY SMOOTHING FLAT	0.01075	1.00	0.01075
J2	LH REGRASP TO HOLD SEAM DOWN	0.00430	1.00	0.00430
SUVE-OLB-SA	Obtain label from box or roll at right table top	0.02795	1.00	0.02795
SUVE-APP-SM	ALIGN LABEL TO CENTER BACK WAIST	0.02150	1.00	0.02150
F2	PEDAL TO START MACHINE	0.00430	1.00	0.00430
SUVF-OL-3N	Sew 3", US39500 OVERLOCK, 3250 RPM, NORMAL stop	0.01476	1.00	0.01476
SUVE-RHP-AS	REGRASP RHS BACK PLEAT	0.01720	1.00	0.01720
SUVE-FPS-SS	FOLD RHS PLEAT OVER	0.01935	1.00	0.01935
F2	PEDAL TO START SEW	0.00430	1.00	0.00430
SUVF-OL-3N	Sew 3", US39500 OVERLOCK, 3250 RPM, NORMAL stop	0.01476	1.00	0.01476
SUVF-OL-3N	Sew 3", US39500 OVERLOCK, 3250 RPM, NORMAL stop	0.01476	1.00	0.01476
SUVE-RHP-AS	REGRASP RHS SIDESEAM	0.01720	1.00	0.01720
SUVE-RPS-AS	SMOOTH RHS SIDESEAM FLAT	0.01075	1.00	0.01075
F2	PEDAL TO START MACHINE	0.00430	1.00	0.00430
SUVF-OL-3N	Sew 3", US39500 OVERLOCK, 3250 RPM, NORMAL stop	0.01476	1.00	0.01476
SUVE-RHP-AM	REGRASP WAIST AT CENTER FRONT (2X)	0.01935	1.00	0.03870
F2	PEDAL TO START MACHINE (2X)	0.00430	1.00	0.00860
SUVF-OL-3N	Sew 9", US39500 OVERLOCK, 5200 RPM, NORMAL stop	0.02203	1.00	0.04406
SUVF-OL-3N	Sew 3", US39500 OVERLOCK, 3250 RPM, NORMAL stop	0.01476	1.00	0.01476

Company ATRC APPAREL TECH &amp; RESEARCH CENTER

Plant CAL POLY POMONACAL POLY POMONA

Part MDU-SLACKS MATERNITY DRESS UNIFORM (SLACKS)

Component MDU-SLACKS MATERNITY DRESS UNIFORM (SLACKS)

SUVE-CTK-AA	CUT THREAD WITH UNDERTRIMMER	1.00	0.00860	1.00	0.00860
SATO-WS-CLNBT	CLEAN 16 1/2" BOTTOM LEG OPENING, SLACK	1.00	0.62588	1.00	0.62588
SATS-WS-CLLGOPN	CLEAN 16 1/2" LEG OPENINGS, SLACKS	1.00	0.62588	1.00	0.62588
SUVE-RHP-AL	REGRASP SLACKS AT LHS BOTTOM LEG OPENING	1.00	0.02150	1.00	0.02150
SUVE-APT-NL	FLIP GARMENT AROUND TO ALIGN LEG OPENING	1.00	0.01075	1.00	0.01075
SUVE-RHP-AL	REGRASP GARMENT AT LHS LEG OPENING	1.00	0.02150	1.00	0.04300
SUVE-APN-SM	ALIGN LHS LEG OPENING UNDER FOOT NEAR LHS	1.00	0.01505	1.00	0.03010
SUVE-RHP-AS	REGRASP SIDESEAM	1.00	0.01720	1.00	0.03440
SUVE-RPS-AS	SMOOTH SIDESEAM FLAT	1.00	0.01075	1.00	0.02150
F2	PEDAL TO START SEW	1.00	0.00430	1.00	0.00860
SUVF-OL-3N	Sew 3",US39500 OVERLOCK, 3250 RPM, NORMAL stop	1.00	0.01476	1.00	0.02952
SUVE-RHP-AM	REGRASP LEG OPENING	1.00	0.01935	1.00	0.03870
F2	PEDAL TO START SEW	1.00	0.00430	1.00	0.00860
SUVF-OL-3N	Sew 3",US39500 OVERLOCK, 3250 RPM, NORMAL stop	1.00	0.01476	1.00	0.02952
SUVF-OL-3N	Sew 3",US39500 OVERLOCK, 3250 RPM, NORMAL stop	1.00	0.01476	1.00	0.02952
SUVE-RHP-AS	REGRASP RHS SIDESEAM	1.00	0.01720	1.00	0.03440
SUVE-RPS-AS	SMOOTH RHS SIDESEAM FLAT	1.00	0.01075	1.00	0.02150
F2	PEDAL TO START MACHINE	1.00	0.00430	1.00	0.00860
SUVF-OL-3N	Sew 3",US39500 OVERLOCK, 3250 RPM, NORMAL stop	1.00	0.01476	1.00	0.02952
SUVE-RHP-AM	REGRASP AT FRONT (2X)	1.00	0.01935	1.00	0.07740
F2	PEDAL TO START MACHINE (2X)	1.00	0.00430	1.00	0.01720
SUVF-OL-3N	Sew 3",US39500 OVERLOCK, 3250 RPM, NORMAL stop	1.00	0.01476	1.00	0.05904
M2P0	ROTATE LEG OPENING OUT TO SEW OFF EDGE OF	1.00	0.00430	1.00	0.00860
F2	PEDAL TO START SEW	1.00	0.00430	1.00	0.00860
SUVF-OL-3N	Sew 3",US39500 OVERLOCK, 3250 RPM, NORMAL stop	1.00	0.01476	1.00	0.00860
SUVE-CTS-AA	CUT THREAD WITH PALMED SNIPS	1.00	0.01290	1.00	0.02580
0 MOD	REPEAT TO SEW RIGHT LEG	1.00	0.00000	1.00	0.00000
SATO-WS-ELASTIC	CUT, TACK, SET ELASTIC, MDU SLACK	1.00	1.82609	1.00	1.82609
BATS-WS-ELASTIC	BUNDLING/HANDLINE, ELASTIC OPERATION	1.00	0.14730	1.00	0.14730
W5	STEP TO MACHINE	3.00	0.01075	1.00	0.03225

Company ATRC APPAREL TECH &amp; RESEARCH CENTER

Plant CAL POLY POMONACAL POLY POMONA

Part MDU-SLACKS MATERNITY DRESS UNIFORM (SLACKS)

Component MDU-SLACKS MATERNITY DRESS UNIFORM (SLACKS)

SUVE-DPT-NL	ASIDE GARMENT TO TABLE	0.01505	1.00	1.00	0.01505
465 MODS	TIME TO ROTATE PRESSER FOOT FOR TACK ELASTIC	1.00000	0.05	1.00	0.05000
465 MODS	TIME TO ROTATE PRESSER FOOT FOR SET ELASTIC	1.00000	0.05	1.00	0.05000
SATS-WK-CUTELAS	CUT 29" ELASTIC	0.10750	1.00	1.00	0.10750
M5G1 M5P0	GRASP ELASTIC AND PULL OUT FROM ROLL	0.02365	1.00	1.00	0.02365
SUVE-APT-FL	ALIGN RIGHT END ELASTIC TO TABLE GUIDE	0.02150	1.00	1.00	0.02150
M3P5	SLIDE LH TO TABLE GUIDE AT LOCATION OF CUT	0.01720	1.00	1.00	0.01720
J2	LH REGRASP AT LOCATION OF CUT	0.00430	1.00	1.00	0.00430
SUVE-CPS-SA	CUT ELASTIC WITH SNIPS	0.03440	1.00	1.00	0.03440
SUVE-CPX-NA	XTRA CUT TO CUT THROUGH ELASTIC	0.00645	1.00	1.00	0.00645
SATS-WK-TKELAST	TACK ELASTIC	0.22871	1.00	1.00	0.22871
M4G1	RH GRASP END OF ELASTIC	0.01075	1.00	1.00	0.01075
SUVE-APP-FM	ALIGN ENDS OF ELASTIC TOGETHER	0.02795	1.00	1.00	0.02795
SUVE-APN-FM	ALIGN ASSY ENDS OF ELASTIC UNDER NEEDLE	0.02150	1.00	1.00	0.02150
F2	DROP PRESSER FOOT	0.00430	1.00	1.00	0.00430
SUVE-SBL-AA	SEW BACKTACK, LEVER	0.02150	1.00	1.00	0.02150
SUVF-LSS-1E	Sew 1",Singer 591 Single Ndl Lockstitch, 2000 RPM,exact	0.01525	1.00	1.00	0.01525
SUVE-RPR-SM	ROTATE 90 DEGREES AROUND NEEDLE	0.01935	1.00	1.00	0.01935
SUVF-LSS-1N	Sew 1",Singer 591 Single Ndl Lockstitch,2000 RPM,normal	0.01095	1.00	1.00	0.01095
SUVE-RPR-SM	ROTATE 90 DEGREES AROUND NEEDLE	0.01935	1.00	1.00	0.01935
SUVF-LSS-1E	Sew 1",Singer 591 Single Ndl Lockstitch, 2000 RPM,exact	0.01525	1.00	1.00	0.01525
SUVE-RPR-SM	ROTATE 90 DEGREES AROUND NEEDLE	0.01935	1.00	1.00	0.01935
SUVF-LSS-1N	Sew 1",Singer 591 Single Ndl Lockstitch,2000 RPM,normal	0.01095	1.00	1.00	0.01095
SUVE-SBL-AA	SEW BACKTACK, LEVER	0.02150	1.00	1.00	0.02150
F2	LIFT PRESSER FOOT	0.00430	1.00	1.00	0.00430
M3P0	PULL ELASTIC FROM UNDER PRESSER FOOT	0.00645	1.00	1.00	0.00645
SATS-WK-SETELAS	SET ELASTIC (36" STRETCHED) TO WAIST	1.34258	1.00	1.00	1.34258
M3G1 M3P2	GRASP WAISTLINE OF SKIRT AT TABLETOP; PSN TO	0.01935	1.00	1.00	0.01935
M3G1	GRASP ELASTIC IN OPPOSITE HAND	0.00860	1.00	1.00	0.00860
SUVE-APP-FS	ALIGN ELASTIC WAIST AT SEAM	0.02580	1.00	1.00	0.02580

Company	ATRC	APPAREL TECH & RESEARCH CENTER
Plant	CAL POLY POMONACA	POLY POMONA
Part	MDU-SLACKS	MATERNITY DRESS UNIFORM (SLACKS)
Component	MDU-SLACKS	MATERNITY DRESS UNIFORM (SLACKS)
SUVE-FPS-FS	SIMPLE FOLD TOP OF WAIST LINE DOWN OVER	0.02580
J2	REGRASP ASSY	0.00430
SUVE-APN-FM	ALIGN ASSY UNDER NEEDLE	0.02150
SUVE-RPS-AS	SMOOTH FOLDED WAISTBAND	0.01075
F2	DROP PRESSER FOOT TO START SEW	0.00430
M4G3 M4P2	GRASP STRAIGHT PIN AND INSERT TO WAISTBAND	0.02795
M2P2	PUSH PIN THROUGH TO HOLD IN PLACE (2X)	0.00860
SUVF-LSS-1N	Sew 1",Singer 591 Single Ndl Lockstitch,2000 RPM,normal	0.01095
SUVE-RHP-AS	BH REGRASP ELASTIC/WAISTBAND EVERY 4"	0.01720
SUVE-APP-FS	ALIGN ELASTIC TO WAIST EVERY 4"	0.02580
SUVE-FPS-FS	FOLD WAISTBAND OVER ELASTIC EVERY 4"	0.02580
J2	RH REGRASP ASSY EVERY 4"	0.00430
F2	PEDAL TO START SEW EVERY 4"(NOTE: REDUCED M/C	0.00430
SUVF-LSS-2N	Sew 2",Singer 591 Single Ndl Lockstitch,2000 RPM,normal	0.01545
M4G1 M3P0	GRASP BULK OF SKIRT AND ROTATE OUT OF WAY (3X)	0.01720
SUVE-SBL-AA	SEW BACKTACK, LEVER	0.02150
F2	PEDAL TO LIFT PRESSER FOOT	0.00430
M3P0	MOVE FROM UNDER NEEDLE	0.00645
SUVE-CTS-AA	CUT THREAD WITH PALMED SNIPS	0.01290
M3G1 M4P0	GRASP AND REMOVE STRAIGHT PIN FROM WAIST	0.01720
M4G1	REGRASP WAIST	0.01075
M3P0	PULL & RELEASE WAIST ELASTIC 3X TO DISTRIBUTE	0.00645
SATO-WS-PRESS	PRESS MDU SLACKS	2.37905
BATS-WS-PRESS	HANDLING-PRESS MARINE MATERNITY SLACKS	0.12900
W5	WALK TO IRONING BOARD	0.01075
FATS-WS-PRESS	PRESS LADIES MATERNITY SLACKS	2.25005
SATS-WS-TURN	TURN SLACKS	0.15695
FATM-WS-PRSDSM	PRESS 1 SIDESEAM, MATERNITY SLACKS	0.50210
SATS-WS-TURN	TURN SLACKS	0.15695
FATM-WS-PRCREAS	PRESS CREASES, MATERNITY SLACKS	0.93195



Company ATRC APPAREL TECH &amp; RESEARCH CENTER

Plant CAL POLY POMONACAL POLY POMONA

Part MDU-SLACKS MATERNITY DRESS UNIFORM (SLACKS)

Component MDU-SLACKS MATERNITY DRESS UNIFORM (SLACKS)

SATO-WS-FLDBAG	INSPECT, TRIM, FOLD, BAG, SLACKS	1.00	0.32895	1.00	0.32895
BATS-SKR-BAG	HANDLING, FOLD & BAG MARINE MATERNITY	1.00	0.06450	1.00	0.06450
W5	STEP TO FOLDING TABLE	6.00	0.01075	1.00	0.06450
SATS-WS-INSFLD	INSPECT, TRIM, FOLD MATERNITY SLACKS	1.00	0.13330	1.00	0.13330
SUVE-APT-FL	LAY CREASED SLACKS TO TABLE	1.00	0.02150	1.00	0.02150
SUVE-FPS-SL	SIMPLE FOLD BOTTOM OF LEGS UP APPROX. 10"	1.00	0.02795	1.00	0.02795
SUVE-FPS-SL	SIMPLE FOLD END UP APPROX 10" MORE	1.00	0.02795	1.00	0.02795
SUVE-FPS-SL	SIMPLE FOLD END UP APPROX 10" MORE	1.00	0.02795	1.00	0.02795
SUVE-FPS-SL	FOLD TOP OF SLACKS OVER TO COMPLETE FOLD	1.00	0.02795	1.00	0.02795
SATS-WS-BAGSTKR	BAG GARMENT ADD STICKER BAG	1.00	0.13115	1.00	0.13115
M4G3 M4P0	GRASP BAG & LAY TO TABLE	1.00	0.02365	1.00	0.02365
FUVM-BGM	Bag folded garment manual	1.00	0.07310	1.00	0.07310
SUVE-OSR-AA	Obtain sticker from roll and position to part	1.00	0.03440	1.00	0.03440